iTX 2.12 Service Pack 18

Integrated Playout

Release Notes

2022-11-11

www.grassvalley.com

FCC Compliance

In order to comply with FCC/CFR47: Part 15 regulations, it is necessary to use high-quality, triple-screened Media or Monitor cable assemblies with integrated ferrite suppression at both ends.

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Title	iTX 2.12 Service Pack 18 Integrated Playout
Revision	November 09, 2022

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Introducing iTX 2.12

iTX 2.12 is a cumulative, full-version release of the iTX software, in that it contains all the features and fixes from the initial v2.12 release, iTX build 3.211.0.312 and supplemental releases since. As such, it can be used for new installations, for upgrading from one major and minor release to another, or for updating the same release stream.

Microsoft .NET Framework 4.6.1 required to run iTX 2.12 services
All machines running iTX 2.12 services must now have Microsoft .NET Framework 4.8 installed. **Also note that as of .NET 4.6.1, Microsoft has removed support for Windows Vista and Server 2008. As such, the operating system requirement for iTX 2.12 is Windows 7 SP1 (or later) or Windows Server 2008 R2 SP1 (or later).**

A machine restart may be executed during the iTX installation process when installing/upgrading iTX components requiring GV Engine 2.5
In iTX 2.12 SP11, if the iTX component being installed requires GV Engine 2.5, the installation process may be interrupted and a restart of the recipient machine is automatically performed. Once the machine has been restarted, you must re-launch the iTX Installer to complete the installation. The restart requirement is only performed the first time that GV Engine 2.5 is installed.

Version v2.12 SP18 (build 3.212.18.1314)

New Features

★ **ITX-16069 Implement Deltacast Support**

iTX now supports the use of Deltacast video cards for playout and ingest. Two models of card are supported:

- Deltacast 12G-ELP-H 4C (8 configurable bi-directional ports)
- Deltacast 12G-ELP-H 2C (8 configurable bi-directional ports)

These cards work in much the same way as AJA Corvid 88 cards in that they have 8 bi-directional SDI ports, the use of which is configurable, plus a connection for Black & Burst or VITC reference.
When iTX is installed, the ports are pre-configured as to whether they are in input or an output when the type of channel or channels required are selected via the TXPlay Configuration application (a shortcut to this application is automatically placed on the desktop during the installation process).
The connector allocation mirrors those of the AJA Corvid 88 card. For more information on cabling the Deltacast 12G cards, please download the Deltacast 12G cabling guide from here:

https://www.deltacast.tv/media/30145/VideoMaster_CablingGuide_sdi_elp-h.pdf

Installation

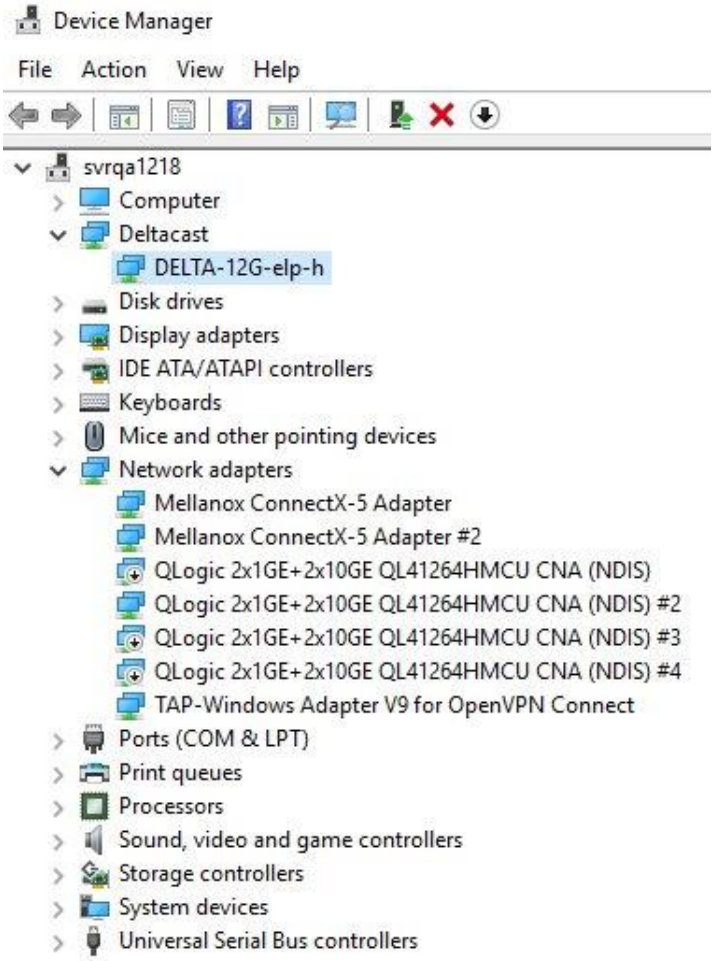
Your iTX playout/ingest server will come the Deltacast card already fitted. The drivers and firmware required for the installation of the card are bundled in the iTX Installer in the same 'drivers' directory as the AJA driver.

Extract this zip to a directory on the Output Server. Right click on the Install.bat file that is in the root of the Deltacast Drivers 6.19.13.0 directory. This will install the correct version of drivers and firmware for your device.

NOTE: your computer may prompt you for a re-boot after the installation has completed.

To check that the drivers and firmware have installed correctly, right-click on the Windows/Start button (bottom left of the Windows tool bar) and select 'Device Manager'.

Device Manager will display the following:



To check the version of drivers and firmware, right click on ‘DELTA-12G-elp-h’ and select ‘Properties’. Select the ‘Driver’ tab in the window that appears. The number should be 6.19.13.0

This will also be reflected in the Engineering tab of the iTX Output Server service also, once your iTX Channel has been installed. There you will see the Deltacast firmware version, which should be reported as 0x21121911.

Version v2.12 SP17 (build 3.212.17.1310)

Bugs Fixed

The following is a list of iTX 2.12 features and enhancements. The most recent items are marked with a star (★) symbol.

★ **ITX-15841 Pinned item goes Done while channel still in hold**

When a channel is in hold on a Skipped item, and an operation is performed like deleting a

future item, the timing calculation considered the Skipped item as history. This stopped the Pinned item being re-Pinned. The channel now ignores Skipped items for this evaluation.

★ **ITX-16053 Duplicate Take Request causes incorrect Emergency Take and Backup out of sync**

Duplicate Take Requests setup two listeners for aggregating TxPlay Cue states. A race condition existed where the second listener never received the state from the backup channel, causing an Emergency Take. Channel Controller now filters out duplicate Take Requests.

★ **ITX-16080 Cavena subtitle integration put previous event subtitles to air**

Cavena subtitler status messages intended for a playout channel could end up being sent to the matching Edit channel. In the playout channel. this would lead to timeout messages, confusion as to what subtitle event was on air, recueing of events and potentially the airing of incorrect subtitles by the Cavena device. The Edit channels no longer register interest in these status messages, so confusion causing these symptoms no longer happens.

★ **ITX-16081 NAS disconnection caused purge of cached assets**

Missing Material Manager will report items missing if the NAS is unreachable. Previously it would issue Restore jobs for these assets. Restore jobs delete the iTX locations, which causes the Media Cache to purge the cached version. The Restore jobs will not succeed if the NAS is unavailable. Missing Material Manager will now still report items missing if the NAS is unreachable, but it will not issue Restore jobs.

★ **ITX-16125 GPI triggers would fail to take into a sequence if video clips were on air**

With GPI-configured triggering of sequences enabled, valid sequences would not be triggered if the on-air item was a video clip. The Channel Controller has been updated so that valid sequences are now triggered correctly regardless of the item that is on air when they are triggered.

★ **ITX-16096 DTMF pre-roll incorrectly calculated**

The pre-roll calculation for SCTE104 DTMF was out by a factor of 10. This has been corrected.

Version v2.12 SP16 (build 3.212.16.1297) Fixes

- **ITX-13365: Subtitle service configuration is lost from Channel Config when restarting OutputServer2**

Subtitle service configuration was being lost if some event that re-wrote the channel configuration, such as a latency message from GVEngine, was received before the subtitle configuration could be retrieved from the database.

This is resolved by ensuring the subtitle configuration is retrieved at the earliest opportunity rather than waiting until it is required.

- **ITX-15164: Item editor for Live Events did not display transition duration from the item**

The Item editor for Live Event schedule items would retain previous settings rather than display the settings of the selected item. Editing Live Event items would work (and the control would then display the edited value). Subsequent Live Event would all appear to have that newly confirmed value until next edited. The item editor now correctly updates the transition duration values to reflect the selected Live Event item.

- **ITX-15697: Edit channel does not expand Sequences**

Edit channels use the Channel Controller Sequence drivers, but TxPlay message handlers. The Replace message sent from the driver is now different if it is targeting an Edit channel, so it expands on both Edit channel and Network.

- **ITX-15849: Playing Vertigo Events when a channel is not licensed for Vertigo events causes problems**

If a channel that is not licensed to use Vertigo events has a schedule loaded into its playlist that contains Vertigo events then the Channel Controller application will log endless errors when processing the items. This can happen when channels share a common scheduling system but have different licensing requirements. These error messages are also logged in the System Service logs and can take up large amounts of disk space on both the Output Server and the Framework Server running the Logging Service. Changes have been made to elegantly handle the items in an error state due to the lack of Vertigo support. Logging of these messages to the System Service is now suppressed.

- **ITX-15852: Improvements to performance during channel failover and updating of items**

Updates to the user interface have sometimes taken as long as tens of seconds to update to the Desktop channel control layout user interfaces. This has affected failover, schedule restore and updates to items in playout channels. Playout has usually been consistently accurate but user confidence is affected and control of the channel is compromised by the updating.

Numerous performance improvements have been made to the Channel Controller, TxPlay2 and the Desktop applications to streamline failover, schedule restore and updates to items in the channel playlist. Update times are much improved, although they remain dependent on the total number of items in the channel playlist.

- **ITX-15856: Schedules starting with a comment event and inserted when a secondary event is selected, now insert at the correct level**

If the 'Insert' button is used to insert a schedule which has a comment as its first event. When the currently selected event is a secondary, the new schedule is inserted as a sibling of the secondary's parent event rather than of the secondary event.

- **ITX-15906: Media Cache path instances incorrect**

When a subtitle was recached, TxPlay tried to play the old path instance of the cached files. Media Cache metadata paths are now kept up to date with disk paths.

- **ITX-15972: Slow loading of TGA/TZIP logos causes slowdown of the iTX Desktop**

TGA/TZIP logos are now loaded in a background thread which reduces the impact on the Desktop. Logs will still load fairly slowly into the logo selector window but this will not inhibit the use of the rest of the Desktop or stop PinPoint from working.

- **ITX-15974: GV Engine update**

GV Engine has been updated from version 2.6.1.62 to version 2.6.1.71.

- **ITX-15977: Back to Back Vertigo XG templates do not go to air**

If the previous template on the same layer hasn't been cleared, it would stop the subsequent template take command being sent. The resolution was to wait until the clear of the previous template before sending the take for the next one.

- **ITX-16006: External Logo and Clarity items would report error status in the Channel Controller**

These events would play out correctly but would present an "Error" state in the Channel

Control layout when viewing the NETWORK channel when they were expected to show "Ready" state. Changes to the Channel Controller have restored the normal display of the "Ready" state.

- **ITX-16027: When deleting Cavena External Subtitle schedule items from a channel on-air subtitles are removed**

Any deletion of future Cavena External Subtitle schedule items from the playlist could cause any on-air Cavena External Subtitle schedule items to be removed from air. Changes have been made so that only truncation of or expiry of the on-air Cavena External Subtitle schedule item will affect that item.

Version v2.12 SP15 (build 3.212.15.1282)

New Features

- **ITX-15952: Support for SCTE 104 supplemental insert_avail_descriptor_request operations**

A supplemental SCTE104 operation insert_avail_descriptor request can be added to ENHANCEDSCTE and TIMESIGNALSCTE Enhanced VANC events.

This can be scheduled manually using Channel Control desktop layouts. The SCTE104 tab in the content selector and the Item Editor for Enhanced VANC events both contain a field "Provider Avail ID(s)". This can be used to specify a comma-separated list of 32-bit unsigned integers that will be used as to generate the num_provider_avails and provider_avail_id fields of the descriptor.

The same data can be scheduled using either the iTXML or BXF 4.0 traffic implementations as per the iTX API documentation for each protocol.

Fixes

- **ITX-15611: TxPlay and Channel Controller logging of GV Platform interactions improved**

Channel Controller and TxPlay logs would show relatively meaningless entries such as "Discovery" or "Security". After changes to the code in those applications, the logging shows the intended message and associated data parameters.

- **ITX-15783: Channel Controller did not provide Content Type and custom colours for some secondary events**

OPUS asset metadata includes a Content Type field. Assets with Content Type specified display in a matching custom colour (if configured) when viewed in Desktop Channel Control layouts. Subtitle events, CG events and voiceover events did not present the correct Content Type or the custom colour when viewed on the Channel Controller playlist in those layouts. Changes have been made in the Channel Controller application to rectify this so that the Content Type and custom colour are presented correctly.

- **ITX-15795: Vertigo events with trailing linefeed and carriage return characters in their names fail to play without warning**

Scheduling Vertigo events with carriage returns and line feeds in the template name are not supported. However, they will pass media checks and events containing them will appear to be valid and ready for air. The actual playout will fail. Changes have been made to TxPlay2 to trim line feeds and carriage returns from the end of events, preventing this. In this case, TxPlay2 will actually successfully play these events to air, rather than failing.

- **ITX-15799: iTX Master Control Secondary Event logos on an IS750 DSK would flash off during a failover**

  Failover in the Channel Network architecture in iTX 2.12 necessitates a schedule restore be performed on the newly on-air channels. This differs from the Leader/Follower architecture in iTX 2.10 and before. During this schedule restore, events controlling IS750 DSK would reload, re-arm and re-take the events to air. During the reload, the DSK would be turned off. A logo would disappear and then reappear on the channel output. The schedule restore process now assesses the asset loaded on the DSK and will only issue a load if the correct item is not already loaded. This prevents logos from disappearing and reappearing.

- **ITX-15843: Manually-added SCTE 104 events would not be played out if there were fewer than 3s between events**

  If an operator inserted SCTE 104 events from the Channel Control layout, and those events were too close together, only the first event would play out until about 3s after that initial event. Traffic-scheduled events, or events spread out by more than 3s would play correctly. After a change in the Enhanced VANC content selector, manually-added SCTE 104 events perform in the same manner as traffic-schedule events.

- **ITX-15853: Clip Fixer can fix assets that suffered from timeouts during Register In Place media analysis**

  Use of the Register In Place (RIP) functionality in Deliver Manager can result in MXF assets being brought into the destination domain under circumstances that lead to timeouts when analysing the media. This leaves the assets' available flag indicating the asset is not available, and the asset will have no audio track data associated with it.

  The Clip Fixer utility has had two options added.

  The option "Shallow Analysis of iTX Location" will trigger a shallow analysis of the media file referred to by the iTX location, and replace any existing analysis information with the new information.

  The option "Shallow Analysis of iTX Location retaining archive locations" does the same process, but will retain e.g. archive locations with Media Versions that do not match the iTX location.

  Running these options against affected assets will restore the available flag and generate audio track data.

  In general, if other locations than a single iTX location are being transferred via RIP (e.g. archive locations), then the "Shallow Analysis of iTX Location retaining archive locations" should be used. If just the iTX location is being transferred, "Shallow Analysis of iTX Location" should be used.

- **ITX-15873: Changing ALC state would result in excessive logging to the system log**

  When ALC is enabled or disabled for the channel using the Channel Control layout, the Channel Controller application would begin logging an error every millisecond until the entire schedule was deleted.

After a change to the Channel Controller, this no longer happens.

- **ITX-15874: Logos that should have aired during rollunder permanently consume a GV Engine slot.**

  During rollunder operation, TxPlay instructs events to cue, ready for the rollunder to be cancelled at any time. When the end time of these events passes, they are un-cued. For logo events, an incorrect command was being sent to un-cue the event in this circumstance. TxPlay now sends both commands (one is required for this scenario, and the other is required for normal playout).

- **ITX-15930: BXF SPLICER and ENHANCEDSCTE events did not apply "ID" parameter to splice_event_id.**

  When specifying the "ID" key value pair in a BXF SPLICER or ENHANCEDSCTE event, the BXF documentation states that the value will be applied to the splice_event_id. In fact, the ID of the event from the playlist is used instead. Changes have been made to TxPlay2 and OutputServer2 to ensure the splice_event_id applies the value specified by the "ID" data. If the "ID" data is not supplied, the existing behaviour applies and the ID of the event from the playlist is used.

Version v2.12 SP14 (build 3.212.14.1274)

Fixes

- **ITX-15869: Opus Service crashes with exception**

  Opus service has been updated to now use dtsearch v7.97 and to also install the required C++ 20152019 redistributable.

- **ITX-15864: XG graphics fail to air**

  XG logos were going into bypass. The resolution was to update the GV Engine version that is included with iTX

- **ITX-15858: DolbyE audio channels were not being recognised for certain MXF files**

  The way audio tracks were identified for MXF channels has now been reverted back to the original way, using the 'trackID' rather than the 'sourceTrackID'.

- **ITX-15851: Schedule Restore causes previously truncated item to go back to air**

  The resolution is for Channel Controller to queue a schedule backup when an item is automatically truncated by subsequent Fixed Start item.

- **ITX-15842: Resolved an issue where GPI would not fire when using a client offset.**

  The GPI service didn't allow for the Time Service being configured with a 'Client Offset from UTC'. This has now been resolved.

- **ITX-15840: First element of a split break would not go to air on a sub channel**

  Sub channel events were marked as secondary events on the sub channel when they should be primary events. Secondary events cannot be sent on air by themselves and for the first event in the break this would stop the event from going on air.

- **ITX-15832: Added a default router configuration to the Hardwired Router Service**

  By adding a file called DefaultRoutes.txt into the same folder as the Hardwired Router Service, this will now preform the routes in this file on startup before the service becomes available. The file requires entries to match the names exactly as in the config.txt in the format “Source,Destination”.

- **ITX-15813: External subtitle events not being cued in time to be ready to go to air**

  External subtitle events were timing out when being sent to Polistream and were not being resent until close to the on-air time of the event causing them to fail to go on air. Events that timeout are now resent sooner to allow them to be ready for the on-air time.

- **ITX-15802: IP channel backup failed to take sequence from SCTE Start Normal signal**

  The Channel Controller failed to allow the backup channel enough time to cue its background live that

monitors for SCTE triggers during the sequence. The resolution is to increase the cue-timeout tolerance to fill the pre-roll window.

- **ITX-15791: Device Pool is not saved when creating a Scheduled Booking**

  The Scheduled Booking dialog was not saving any changes to the Device Pool when creating or updating a Booking. The resolution was to allow the UI to correctly update the model.

- **ITX-15749: Turning off Discovery mode caused an exception when running diagnostics**

  An exception no longer occurs when running the Locator service's Discovery mode in OFF and then selecting the service's Diagnostic option.

- **ITX-15711: Custom: Fox AsRun Plug-in Configuration component would not load.**

  Since the change to 64-bit Desktop, layouts containing the Fox AsRun Plug-in Configuration component would display a white frame instead of the component. Changes were made to compilation options to support the 64-bit version of the Desktop. The components once again draw correctly.

- **ITX-15707: Cue slots are no longer left open when a schedule item is skipped.**

  Previously, in scenario where a schedule item was skipped, the relevant cue slot would not be closed down. Skipping multiple items would lead to no further scheduler slots being available. Ultimately, this would lead to playout failure.

- **ITX-15643: Polistream subtitle event wouldn't resume on failover**

  The Polistream subtitle event is now updated periodically to ensure that it is put on-air if failover occurs. Previously it would only put the subtitle event on-air at the start of the event so was not updated on failover.

- **ITX-15615: Fixed an issue with the Subtitle Conversion Module not doing DVB Boxing correctly**

  When DVB Russian Teletext subtitle conversion was being done from PAC into an STL and a XIF file then after the conversion from PAC to XIF, the XIF conversion had not got the correct output as the boxing type was set to ‘None’. This has been resolved and the resulting XIF files now have the correct boxing value of Boxed.

- **ITX-15518: Server Controller crashed creating a memory dump**

  The Server Controller no longer crashes when creating a memory dump.

- **ITX-15507: A race condition where a blank version of the schedule (item count = 0) was saved to the database, after Channel Controller was restarted.**

  A blank version of the schedule was sometimes sent to the database after the server's Channel Controller service was restarted.

- **ITX-15233: AFD codes missing on live events**

Fixed an issue where live events would not pass the AFD data to GVEngine and thus would not show on air.

Version v2.12 SP13 (build 3.212.12.1245)

New Features

- **ITX-15700: Vertigo XG secondaries can now be manually held at the on-air point**

  Operators can now place Vertigo XG events into manual hold using the iTX Desktop or via scheduling. The events are held at the on-air point and their start time bounces until they are taken, or until the operator marks them as Skipped. This does not put the entire channel into hold, and primary events will still play out. If there's no longer enough time for them to play out before their parent primary would end, or if a second XG event on the same layer tries to cue, the held event is automatically skipped and falls into the past.

  A limitation is a Manual XG shouldn't be taken when an XG is already OnAir on the same layer. This will work, but the iTX Desktop view and AsRun will not represent the truncated duration of the first event.

Fixes

- **ITX-15733: Vertigo XG events scheduled via BXF could not be edited manually or with the XG viewer**

  The Edit Page function of the Item Editor for Vertigo XG events allows manual changing of the Page specified by the event via the Vertigo XG Viewer dialog. This dialog was not displayed for events scheduled by BXF.

  The dialog is now displayed for events scheduled by BXF.

  Additionally, the Page field has been made editable once more so that simple manual corrections can be made swiftly without the operational overhead of using the dialog.

- **ITX-15732: Deleting a primary event with secondary Master Control events caused a schedule restore**

  When deleting primary events, checks are made to establish whether the deletion must trigger a full restore of all items for a subchannel or regional channel environment. This check did not take into account Master Control secondary events. A full schedule restore was then erroneously triggered. Master Control secondary events are now accounted for correctly, and deleting primary items with Master Control secondary events no longer triggers a full schedule restore.

- **ITX-15695: Master Control events remained in 'New' status in Channel Controller and did not go to air**

  Master Control events were not being passed to TxPlay for processing, which meant that no updates were returned to the Channel Controller for those items and the items did not air. Master Control events are now passed to the main TxPlay for processing correctly.

- **ITX-15691: Subtitle files registered on ingest would not always be copied to the correct store location**

  Concurrent subtitle ingest jobs were updating a shared copied of the store location folder causing some subtitle files to be copied to the incorrect folder. The shared store location folder has been removed so that ingest jobs do not interfere with each other.

- **ITX-15689: Delivery Manager was not importing language metadata**

  RFC 5646 Spoken Language metadata is now supported and is used in the absence of alternate track-specific metadata. The Delivery Manager no longer sets the default of 'Ignore Language Tags' to True.

- **ITX-15640: Improvements to Register in Place support**

  The Register In Place functionality for sharing centralized storage during major system upgrades has been improved. If the source system had Video assets where more than one location was to be available in the target system, only the first ITX location would be propagated. Various properties of Video assets in the source system would not be correctly presented in the target system.

  The following improvements have been made to the propagation of Video assets in the target system:

  Configured "Additional Locations to Keep" are now propagated and kept in sync with the source system (removed and added as changes are made). Only ITX locations, DIVArchive locations and VideoArchive locations are supported.

  AFD Source Format and Active Region are now correct.

  Default video transition type and duration are now correct.

  All Video assets are processed during initial synchronization rather than just those with ITX locations being considered.

  There is a restriction where attempting to propagate Video assets with time mode set to "None" fails.

- **ITX-15634: Sequences emptied of items would not calculate duration correctly or consistently**

  If a sequence had all items removed from it with a delete operation, the duration of the remaining header item would remain unchanged on the TXPlay channel, and reduce to the duration of the last item in the sequence on the Channel Controller. Not only were these both wrong, the inconsistency would result in the timelines of the Channel Controller and TXPlay becoming desynchronized. In this scenario, the header now has its duration correctly reduced to zero on both channel types.

- **ITX-15610: Headers of fixed schedules inserted at hold had Auto start times**

  If a schedule, starting with a fixed item, was inserted into a channel currently being held, the header placeholder of that schedule would have the same start time as it would have had in Auto time mode. The header now shares the start time of the first fixed item.

- **ITX-15550: Achronological secondary items within schedules prevented subsequent items from being On Air**

If a secondary item within a schedule had a start time in the future, then any item placed after that item in the schedule would not be marked as on-air upon going to air. Instead, the schedule event itself would be treated as the on-air item. Now, secondary items in general cannot prevent subsequent items from going to air.

- **ITX-15480: Master Control secondary events were taken off air after schedule restore or channel failover**

  Historic, duration-based, secondary Master Control logo and voiceover events in the playlist would incorrectly remove an on-air Master Control secondary events of the same type from playout. This would happen after:

  a manual schedule restore operation

  a channel failover for any channel running 1+1 IS750 redundancy

  a channel failover for any channel running shelf spare IS750 redundancy on systems with Channel Network architecture

  The handling of the historic, duration-based, secondary Master Control events has been changed to prevent this behavior.

- **ITX-15473: Off air schedules updated automatically despite disabling Auto Updates**

  The configuration option 'Auto Update Schedules' in the Schedule plugin only applies to the On Air schedule. Therefore, off air schedules were being forcibly replaced when the schedule was reimported, erasing changes by an operator. A new configuration option has been added, Prevent All Schedule Auto Updates, which when enabled prevents all schedules on channels from being replaced automatically by external mechanisms.

- **ITX-15469: The Corvid 44 firmware was incorrect**

  During the switch to AJA 14, the Corvid 44 firmware file was not upgraded, but rather renamed - the former 0x17 file was labelled 0x1c. This led to a number of slight GV Engine issues on machines using those cards. The firmware file has now been corrected to the actual 0x1c version and should be updated on any machine using a Corvid 44 card.

- **ITX-15340: External SCTE 'End Normal' triggers failed to end a sequence**

  Where a sequence followed a live event in the schedule and where a SCTE 'End Normal' trigger was used to end the sequence, the live input name from the live event was required to enable this to work correctly. However, if a comment was placed between the live event and the sequence, it would not get the live input name correctly and would throw an exception. This has now been fixed so that the correct live event is used to obtain the live input name.

- **ITX-15292: GPIs were triggered too early**

  Incorrect time calculations caused the GPIs to trigger before the actual on air time. This has been fixed.

- **ITX-15234: Clips deleted while currently not in a channel did not clear their cache**

  If a clip was cached in a live channel, removed from that and all channels, and then deleted from the asset store, then the cache of the item was incorrectly preserved. Now, deleting an asset with no channel references deletes the cache.

Version v2.12 SP12.2 (build 3.212.12.1220)

New Features

- **ITX-15238: Performance improvements in the Channel Controller**

  Several inefficiencies in the Channel Controller have been improved by reducing processor usage during schedule expansion.

Fixes

- **ITX-15559: Truncating a live event with a different live event and secondary Vertigo event caused the Vertigo page to fail**

  Given a playlist that includes several hundred Vertigo events, if a live event was followed by a different live event with an associated Vertigo secondary event, then the Vertigo event failed to roll if the first live event was truncated by more than a few minutes.

  A code changes in TxPlay2 has been made to ensure that the Vertigo events roll correctly in this scenario.

- **ITX-15558: Polistream media checks were prematurely preparing subtitles**

  The volume of iTX media checks on the Polistream device has been reduced and spread out. This prevents the Remove commands from failing and future subtitles are no longer left in a Prepared state on the Polistream device.

- **ITX-15549: A Shared External Subtitle device failed to playout subtitles following iTX channel failover**

  If main and backup TxPlay use an shared external subtitle device, it's now the OnAir TxPlay that sends the cue, take and clear commands.

- **ITX-15533: Comments were appended to the bottom of the schedule instead of the relevant primary item**

  Comments are now nested on the primary item that they are dropped on.

- **ITX-15531: GV Engine Job Service Provider unable to obtain a license**

  The GV Engine Job Service Provider is now able to obtain a license following an upgrade to the 64 bit version. As a result of this fix, the Media Processing Service no longer stops working.

- **ITX-15528: Polistream subtitles failed to air**

  The volume of iTX media checks on the Polistream device has been reduced and spread out. This prevents the Remove commands from failing and media checks, cueing and taking are now successful.

- **ITX-15493: The Billing Reference was not present in the AsRun for copied items**

  A new link has been created between the event and the Extended Data that has the Billing Reference.

- **ITX-15459: Large scale changes to the schedule at cue time caused an on air outage**

  Large scale changes to the live schedule (such as modifying thousands of item with a schedule update) while the next item is cued caused a drop to black due to excessive item status updates being sent to TXPlay. The excessive duplicate messaging was removed to allow large scale updates to proceed unhindered.

- **ITX-15442: Unable to edit a scheduled Vertigo XG page using the 'Edit Page' button in the iTX Desktop's Vertigo XG plugin**

  A scheduled Vertigo XG page can now be edited using 'Edit Page' button in the Vertigo XG plugin as it now loads the page directly from the XMS Server for modification.

- **ITX-15439: The System Service's memory was noticeably increasing**

  A memory leak was identified and fixed.

- **ITX-15398: Deleting an event held at the start point would cause a subsequent hold flag to be ignored**

  If an event was being held at the on-air boundary, followed by another event with Manual Hold enabled, deleting the first would erroneously cause the second to play out, regardless of its configuration. Now, deleting the first held item will not disable hold generally, and the subsequent manual item will correctly be held at the on-air point.

- **ITX-15246: Schedule durations were not being saved back to OPUS**

  With a Schedule loaded on the Network Channel Schedule Grid, if Video Clip durations were then updated, the new durations would not be saved back to OPUS. If a Schedule Restore or Failover was then performed, thus reloading the Schedule, the recalled duration values would be the original values. This could result in pre-OnAir items going to Done and a Schedule jump occuring. This issue has now been fixed.

- **ITX-15177: Default ingest booking data could not be edited and would overwrite bookings being edited**

  The Channel Config for the Scheduled Booking Service and Ingest Control Service both include the Scheduled Ingest config plugin. Default values entered in this plugin by iTX 2.12 would not be stored in the correct way. Values prior to iTX 2.12 were stored correctly. Default data edited by iTX

  2.12 would not be applied to newly created scheduled bookings.

  This data is now stored correctly and is applied to newly created scheduled bookings.

  When editing existing scheduled ingest bookings, the clip name, routing, device pool and recording profile data stored in the booking would be over-written by the default data for a newly created ingest booking. The booking data is now preserved and can be edited as expected.

- **ITX-15106: Edit channel item checking was very slow**

  When using an Edit channel to carry out media checks on schedules, historical changes to TX-Edit functionality had made media checking significantly slower. A re-write of the checking logic has made this between 2 and 3 times faster.

- **ITX-14803: Channel stopped after a secondary recording finished**

  If a long secondary recording is scheduled, followed by a shorter recording, the analysis of the first recording blocked the channel trying to stop the next recording. The block has been removed, so that the next recording can finish and the channel continues.

- **ITX-14638: Schedule Shift information was not retained after a schedule restore or channel failover**

  The value in the 'Schedule Shift' column of the Schedule Grid identifies by how much an item was time-shifted from its original on-air time if any items are added, deleted or updated. This value was being reset following either a schedule restore or channel failover operation. Now, the calculated value is now retained and recalled following those operations.

- **ITX-13803: The MediaCache service occasionally failed to cache a media copy from the UMP device**

  The issue that occasionally prevented items from being cached has been resolved. The issue was due to them having invalid handles, thus causing media checks and caching to fail.

Version v2.12 SP12.1 (build 3.212.12.1151)

New Features

- ITX-15436: Audio import rules are now available for recordings

Audio import rules can now be configured for Video templates and applied to Secondary Records, Manual Encodes and Ingest Manager Records.

Fixes

- ITX-15492: WIDESCREENSWITCH and X31CUES were not displayed on their relevant tracks in the timeline and couldn't be viewed/edited in the Event Editor

Scheduled WIDESCREENSWITCH and X31CUES events are now processed correctly. Both event types are now schedule against the relevant track type in the schedule timeline and are listed with the correct type. The Event Editor becomes active when each event is selected in the schedule grid.

- ITX-15472: Russian PAC files that were converted to STL files lost the spacing between words

The conversion of Russian PAC subtitle files to STL files now works correctly. The spacing is now being added in the correct places.

- ITX-15452: The System Service log profile was overwritten during upgrade

The SystemService.exe.logging file was overwritten during the upgrade of an existing framework server.

The installation script has been changed so that the file is installed on the first installation and it is not overwritten during software upgrades.

- ITX-15441: Consecutive ingest jobs failed after the first booking completes

All Ingest recordings scheduled via the Ingest Control Service are now completed as expected.

- ITX-15431: OPUS obtains client connections whilst completing the index update backlog

When the re-index occurs and other updates are added to a queue to be processed after the index is complete, the OPUS service now waits until the queue is processed and then becomes available allowing other OPUS services to start load balancing connections against it.

- ITX-15388: The vertical positioning of single line subtitles was displayed incorrectly on output

Previously, single line subtitles vertical positioning would be displayed incorrectly on output, meaning the VPos was set much lower for a one line subtitle. This is now fixed with the single line subtitle title being in the same vertical position of the second line of a two line subtitle and all subtitles being displayed in the safe area.

- **ITX-15379: Sequence headers incorrectly displayed an Error status**

  Sequence headers incorrectly showed an Error state, but still played out the sequence items as expected. The Sequence Ready handler was changed and it no longer mistakenly reports an error state.

- **ITX-15160: The Global Search component failed to load after using the Find and Replace in the Schedule Grid**

  The Global Search component now successfully loads after using the Find and Replace shortcut in the Schedule Grid.

- **ITX-14793: Delivering new versions of subtitle files causes issues if previous versions are currently being cached**

  When subtitle files were still caching when new versions of those subtitles are delivered via Delivery Manager, MediaCache sometimes entered into an abort/re-cache cycle. The known subtitle file locations were not refreshed correctly, which caused it to continually try to access the old subtitle file locations that had already been reallocated. The subtitle assets are now reloaded so that the changed file locations are noted.

Version v2.12 SP12 (build 3.212.12.1124)

New Features

- **ITX-15254: Added an Ndi Output option for Output Server 2**

  The TXPlay2 Configuration application has been enhanced to allow users to select Ndi streaming as an output type for the channel.

- **ITX-15203: The iTX On Demand Process parameters for Kantar Snap have been updated**

  The iTX On Demand Process parameters for Kantar Snap have been updated to reflect the Kantar SDK v8.0 metadata naming conventions.

- ITX-15202: The versions of GVE and Kantar Snap included in iTX have been updated

  iTX now includes GVE 2.6.1.5 and Kantar Snap SDK v8.0.

  Also, the Output Server 2 window now shows the expiry time in days of the Kantar Snap Audio Watermarking License.

- **ITX-15068: Stratus metadata export to ITX**

  iTX now has the ability to import Stratus segmentation data through a schedule processing service Inbox.

- **ITX-15064: Added SCTE 104/35 support for time signal requests**

  Our support for SCTE 104/35 message insertion has been expanded to include support for time signal requests as well as splice insert requests as "Normal request" operations. These can be manually scheduled on a channel using the SCTE 104 plugins in the content selector and item editor. Broadcast Management Systems can schedule these events via iTXML and BXF 4. This is documented in the latest version of the BXF Implementation Guide and iTX API Schedule Import Protocol (iTXML).

Fixes

- **ITX-15286: Taking selected items prevented further items from being cued**

  If an item was skipped over by being before an item taken with the Take Selected Item functionality, iTX could have still possibly force GV Engine to fill a cue slot for it. As this would never be emptied, with enough items skipped, the available cue slots would have eventually filled and new items could not have been cued. Items that have been skipped are no longer considered by iTX for cueing, preventing this scenario.

- **ITX-15267: Language code page**

  The pac subtitle file reader will now set the code page to Latin for Romanian files

- **ITX-15249: Opus Service logs were unnecessarily filled with entries relating to GV Platform**

GV Platform is optional for 2.12 systems. If not configured, Opus Service was continuously writing log entries warning that GV Platform was not contactable to raise notifications. The system now checks once on startup for a configured GV Platform.

- **ITX-15236: Channel Controller made unnecessary calls to the SQL database for XG events which lowered system performance**

  Performance improvements have been made to the Channel Controller to prevent it making unnecessary calls to the SQL database for XG events.

- **ITX-15229: Cached subtitle files were being played from the incorrect location**

  Subtitle files being cached were placed into cache folder locations that were incorrect within the schedule and thus could not be played to air. The subtitle file's full metadata is now checked and stored for each subtitle intent producing a new path and sub folder and results in the correct schedule metadata.

- **ITX-15163: Channel Controller log files grew at an unmaintainable rate**

  Channel Controller log files were found to grow on the scale of gigabytes per hour, eventually filling the host machine's storage. This was isolated to four log lines that were, under varied and specific circumstances, being repeatedly written under at second or millisecond rates. These log lines have been either removed, or the situation where they could occur repeatedly has been prevented.

- **ITX-15122: The iTX Updater service did not work with newer versions of Windows**

  Previously when an iTX installer .zip was placed into the Updater Service's ftpPath configured location, it would not unzip or install the new version due to changes in later Windows operating systems from Windows 2012 onwards. The Updater Service has been updated to correctly unzip the file and preform the required rollback, or update of the iTX software, and then restart all the iTX services running under the Server Controller.

  Configuration of the Updater.exe.config file is required to ensure the key ftpPath's value is set correctly for the server it’s running on.

- **ITX-15120: iTX installer no longer removes required VertigoXG software**

  Previously when installing or upgrading iTX on a server with Vertigo XG installed the required 32 bit FPP would be uninstalled by default unless you intervened. Changes have been made to the installer to ignore the 32 bit FPP installation unless this is also required by iTX. Older versions of iTX such as

  2.10 will correctly allow the FPP to update as required, whereas 2.12 for OS1 will correctly swap from the 32 bit FPP to the 32 bit GV Engine. Where the 64 bit GV Engine is required for 2.12 OS2 or 5.x then the installer will ignore FPP and only GV Engine will be changed if required.

- **ITX-15117: Cached subtitle files were being played from the incorrect location**

  Subtitle files being cached were placed into cache folder locations that were incorrect within the schedule and thus could not be played to air. The subtitle file's full metadata is now checked and stored for each subtitle intent producing a new path and sub folder and results in the correct schedule metadata.

- **ITX-15112: Missing Materials Manager's Purge becomes disabled after a schedule fails to load**

Missing Materials Manager waits until all schedules are loaded before performing a purge. If a schedule fails to load, Purge is no longer disabled while another attempt to reload the schedule is made during the next search.

- **ITX-15108: After a playlist is saved by the Channel Controller, Missing Materials Manager interprets the playlist as having no future events**

  Missing Materials Manager was using stale event states to determine if an item was in the future or not. It no longer relies on event states to exclude items in the past.

- **ITX-15070: Multiple instances of Channel Controller and TXPlay subtypes shared log files**

  TXEdit channels, TXLive channels, and all Channel Controllers now add a numeric extension to their logging profile when multiple instances are associated with one Server Controller, in the same manner as TXPlay, creating unique logging locations for each instance. Moreover, Live Channel Controllers now have a ChannelControllerLive profile, distinct from regular Channel Controllers. This does not change any prior logging profile configuration for any existing install.

- **ITX-14901: Slow responses from Missing Materials Manager caused multiple requests to transfer assets that already been delivered**

  Changes were made to Missing Materials Manager to improve its efficiency and responsiveness. Additional GV Platform Metrics were also added to help further identify areas of poor performance.

- **ITX-14807: Unskipping an item that was not skipped cleared the cache information of it and its children**

  If any item were manually unskipped, the cached media information of it and its child items would be reset, regardless of whether it was previously in the Skipped state or not. Close to air, this would cause the item or its children to fail to play out. This has been resolved, so only items that were previously skipped have their cache reset on an unskip command.

- **ITX-14412: The AsRun service continued to update the ITXML logs when it was demoted**

  When the AsRun logging service is demoted, it no longer updates the ITXML logs.

- **ITX-14142: Find and Replace changes video transition back to default transition**

  A scheduled event's Transition setting now persists after a Find and Replace operation has been performed.

Version v2.12 SP11.2 (build 3.212.11.1076)

Fixes

- **ITX-15239: TXPlay logs unnecessary error messages when no GV Platform is present**

  Optional TXPlay functionality was unable to use the GV Platform for notifications and to provide a REST API and would log this as an error. Since the behavior was intended to be optional, it has been fully disabled when GV Platform is not present and now only logs errors when it is expected to be working and encounters real difficulties.

- **ITX-14984: SCTE 104/35 splice requests intermittently triggered skipping of the entire playlist**

  Sometimes when SCTE 104/35 splice_StartNormal and splice_StartImmediate messages were used to trigger break sequences externally, all of the remaining items in the channel's active playlist were skipped and the channel was taken off air. Changes were made to the code and items in the playlist are no longer incorrectly skipped and channel playout continues with the break sequence.

- **ITX-14603: Items not cueing when returning from Live channel**

  The main channel no longer fail to cue items when returning from a RollUnder state when using the Live Channel ByPass functionality.

- **ITX-14218: The file processor was not correctly scheduling the breaks as it was using a break container nested within a regular sequence container**

  The file processor has been changed so that the scheduled breaks are now only contained within a regular sequence container as a secondary event of its parent and pointed at the desired regional channel.

- **ITX-13915: Network Channel not updating In Points, Out Points or Durations**

  On a Network Channel, the values in the Schedule Grid are now properly updated for a segmented clip in a Not Ready state when the clip is revised with different In-Point, Out-Point and Duration.

- **ITX-13229: Events marked as being in Manual hold in the schedule file were being displayed in Auto mode once the schedule was imported and appended in the Schedule Grid**

  Events marked as being in Manual hold in the sdc file are now displayed as such, once the schedule is imported and appended.

- **ITX-12794: Fade through Black transition times were not being calculated correctly for regional channels**

  Using Fade through Black transitions now correctly alter the start times of items in the regional channels to ensure they match that of the network channel, and also reflect this transition within the regional channels schedule grid.

Version v2.12 SP11.1 (build 3.212.11.1063)

Fixes

- **ITX-15182: Converting SCC caption files to MCC files resulted in incorrect in-times for most of the captions**

  There was an issue with back-to-back captions in SCC files where an erase displayed memory code was inserted erroneously. This issue has been resolved.

- **ITX-14354: iTX Desktop Live Logo tracking gets out of sync**

  iTX Desktop Live Logo tracking gets out of sync because it was listening to Live Logo events from other channels. The messages are now filtered by channel, and the Live Logos don't get out of sync anymore.

- **ITX-13355: Skipped items persist in GV Engine cue slots**

  When an item was skipped in the schedule whilst the preceding item was in a 'Ready to Commit' or 'Commit' state, that clip would persist in a GV Engine cue slot and it would not be release once played out. This issue was a regression introduced by GV Engine (2.1.110) and has now been resolved with GV Engine (2.5.1.47).

- **ITX-12784: iTX Desktop Previewer SDI Output doesn't always eject the clip causing an 'SDI output is in use' error message**

  When an iTX Desktop Previewer with SDI Output Device is "ON" and the Previewer SDI Output is taken by a previously selected Video Clip, selecting another Asset Type followed by selecting another Video Clip caused an "SDI output is in use" error message. When the "OK" button was pressed in the message, the SDI output was not released and required a iTX Desktop restart. This issue has now been fixed.

- **ITX-12304: Unable to apply and play a Voice Over on an IP2022-6 output channel as it required an SDI configuration as a prerequisite**

  New IP only servers can be correctly configured and Voice Overs used with no SDI hardware or previous configuration.

- **ITX-12268: Media Cache Service outputs a continuous log line when DIVA Store unavailable that persists even after being reconnected**

  The Output Server's Media Cache Service was continuously generating 'Allocation Timer Callback, Firing Allocation Update Event... MediaFile xxxxxxxxxx' log lines, when each asset without an iTX location, that was present in the disconnected DIVA Store (monitored by Missing Materials), went through the timer for each asset. This logging would persist even after the asset(s) was pulled across from the reconnected DIVA Store. This behavior was creating very large logs, which filled up the drive. This problem has now been resolved. The log line is no longer continuously outputted when the DIVA Store is unavailable and the log line is no longer outputted once the store is reconnected.

- **ITX-12013: Live Channel Network not promoting with Main Channel Network**

  With certain views, the Live Channel Network wasn't promoting with the Main Channel Network. The Desktop displayed 'Follower' and there was no control over the Live Channel Network. The client libraries

were updated and now recognize the channel type.

Version v2.12 SP11 (build 3.212.11.1050)

New Features

- ITX-14954: Added the Post Media Import Fast Proxy Workflow

The new PostMediaImportFastProxy Workflow is designed to allow the low-resolution proxy version of the media to be available to the user quicker by performing the Proxy Generation prior to doing the GVE deep analysis or keyframe generation.

- ITX-14852: The maximum number of simultaneous encodes with HD XAVC Class 200 Profile is now 4

The maximum number of simultaneous encodes that can be performed on the recommended system is 4.

- ITX-14647: Media Processing Service - 64 bit GVEngine

The Media Processing Service has been updated to use the 64 bit version of GVEngine. This affects:

Proxy Generation
Media analysis
Keyframe Generation
ShotList Rendering
Transcode

Fixes

- **ITX-14903: CG Clock shows incorrect time with manual takes**

  When a primary event containing a CG Clock is manually taken to air, the time displayed on the CG Clock is now the current time (including channel offset) rather than the initially scheduled time of the primary event.

- **ITX-14853: Double-height characters were displayed as single-height when processing an STL file to XIF**

  When processing an STL file with double-height characters, the processed xif file no longer displays these as single-height.

- **ITX-14837: PAC to STL subtitles were not displayed in the correct vertical position**

  When processing a PAC file as an STL file, some of the subtitles would be incorrectly be displayed in the middle of the screen. The vertical positioning has been corrected so that the subtitles are now displayed as expected.

- **ITX-14794: XIF files created by the subtitle file translator had incorrect version metadata**

The metadata within the converted XIF files now has the correct tags (e.g. <OriginatorSoftware Name="SubtitleFileTranslator" Version="4.1.0.2194"/>).

- **ITX-14778: Vertical Position Override (VPos) value was incorrect in Open.XIF when converted from Closed.STL**

  The converter version (4.1.0.2192) now correctly overrides the vertical position of a caption if specified in the config file. Currently the Bottom override is only supported which places all captions in the base line or bottom of the safe area.

- **ITX-14708: TXPlay leader/follower channels go out-of-sync on SCTE trigger**

  Adding a Live event to the schedule to receive a SCTE trigger no longer causes items to fail and the channels to go out-of-sync.

- **ITX-14675: Secondary animated logo automatically extended with its parent event during an overrun**

  The Auto button in the Event Editor must now be selected for the secondary animated logo to extend with its parent event in an overrun scenario.

- **ITX-14674: Locator mode was causing connection problems for main/backup channels in multi domain systems**

  Discovery mode is an obsolete Locator mode and caused locations to be added erroneously. A configuration in Omnibus.config has been added to turn it off.

- **ITX-14540: Dropped frames causes main and backup out of sync**

  GV Engine was dropping frames because two graphs were consuming the same SDI input when one ended and the other remained. To remedy this, the background live is now truncated before the main live begins.

- **ITX-14537: Entering timecodes for unpublished segments erroneously reported an error**

  Entering the in point, out point, or duration timecode in the Asset Segmentation layout for any unpublished segment caused an unhandled error and the field to became uneditable, despite retaining the information. The exception is now prevented and unpublished segments can be correctly configured without issue.

- **ITX-14511: Random Vyscheduler restarts causing color bars to go to air**

  A race condition resulting in a memory corruption caused problems for the filters downstream of the scheduler. During the few seconds time it took for the filters to restart, color bars would be display. This issue has been resolved.

- **ITX-14506: DVB subtitles were not output following a change to GV Engine**

  DVB subtitles are now output correctly.

- **ITX-14455: Media Cache - Invalid Handle race condition prevented updated file from caching**

  When a file is updated on the store via a Delivery Manager re-submission at the exact same time as the cache is trying to replace the file, the Media Cache Service no longer produces an error and instead updates local cache file in progress with the newest media file on store.

- **ITX-14450: Subtitle events produced an error upon failover**

  Performing a failover/or schedule restore would cause the scheduled subtitle to fail after the media check had occurred. Now performing a failover once the schedule is on-air, no longer causes the subtitle to show as errored.

- **ITX-14391: Enhanced VANC events that had been imported via BXF would not play to air if they were modified using the iTX Desktop**

  The BXF import process does not specify accurate SCTE 104 message sizes for Enhanced VANC events. When these events are edited using the Enhanced VANC item editor in the Channel Control layout the message sizes are not evaluated. Subsequent playout of the events will fail without notification. The Enhanced VANC item editor now ensures all of the correct data is supplied when the item is updated. The channel now correctly performs the expected splice request insertion.

- **ITX-14382: Locator Service was not registering all services attached to the Server Controller**

  The Locator Service was not always keeping its list of registered services in sync with the Server Controller instances on the same system, which resulted in services not communicating. This has been resolved.

- **ITX-14369: Schedules were not updated on the backup channel of a channel pair**

  A problem prevented schedules from being passed between the main and backup channels. Now when a new schedule is added to the Network channel, the schedule is expanded when viewing one or other of the main channels.

- **ITX-14358: TXPlay2 stopped responding when using the Manual Control interface on the iTX Sports Application**

  TXPlay2 now fully responds when going from Live to a break pod in the Manual Control interface in the iTX Sports Application.

- **ITX-14356: Regardless of the sequence duration, the SCTE trigger lasts for 100 seconds**

  Previously, sequence durations with SCTE events weren't calculating the Break Durations correctly in deciseconds. The SCTE Sequence Break Duration now reflects the actual duration in deciseconds.

- **ITX-14355: Overrides of asset Source Format and Active Region data by scheduled Source Format and Active Region data were not obeyed**

  TXPlay playout of media assets would always follow the OPUS asset metadata for source format and active region regardless of any data supplied in the schedule that was intended to override that behavior. The behavior is now re-calculated at the point of playout so that the overridden behavior from the schedule is obeyed.

- **ITX-14330: Exported Daughter Clips defaulted to a starting time of 00.00.00.00 and conflicted with the schedule's in and out points**

  In and out points on daughter clips now persist in the metadata so they can be used by the rest of the broadcast chain.

- **ITX-14329: Unable to import media with AS11 metadata**

  Clips with AS11 metadata can be imported even if some of the fields are greater than 100 characters in length.

- **ITX-14320: The output's audio and video experienced jitter**

  A memory leak related to the handling of Teletext subtitle pages has been resolved. As a result, output audio and video are no longer experiencing a jitter problem.

- **ITX-14317: Changes to the iTX Desktop's Colour Configuration were overwritten when closing the iTX Desktop Client**

  Changes to the iTX Desktop's Colour Configuration are initially saved as expected, but no longer resaved upon closing the iTX Desktop Client.

- **ITX-14313: Delivery Manager was deleting assets from external stores**

  When sourcing media in a schedule from an external store, if the items not yet transferred to an iTX location were deleted from the schedule, Delivery Manager would delete the items from the external store in as well as cancelling the transfer. This is now fixed.

- **ITX-14297: Playout issues could occur if the Channel Controller duplicated schedule items during schedule restore or failover**

  During the Schedule Restore process it was possible that already-loaded items from a schedule would be duplicated in a channel playlist. This would result in duplicated cueing and taking of items to air. Operationally, items would fail to play or would play but then restart and repeat playout. On-air disruption would occur and recovering often involved re-timing the schedule on an Edit channel and reloading it on the playout channel. This could happen during a manual Schedule Restore operation but also during the failover of a channel. It could happen without warning during any automated failover.

  New code guards against this duplication of items, preventing the problem from occurring.

- **ITX-14260: Live events could not be added to a Backup channel**

  When configuring the Live Plugin for a channel and adding a Live asset to the list, if the Live source has no backup configured, then a popup message appears and the Live asset is not added. To use a Live asset in the Live plugin, the Backup Source must be set within the Asset layout.

- **ITX-14254: Subtitle processing times out too early**

  A timeout is now no longer used when processing with large caption files.

- **ITX-14236: Channel Failover service did not work with Live channels**

  Live channels now appear in the Engineering tab of the Channel Failover service. The Live channels must

be disabled then re-enabled on the new builds in the TXPlay2 Config for them to be seen in the Channel Failover service.

- **ITX-14169: The displayed duration of selected events was incorrect when items were skipped**

  When skipped items (tested with video and stills) have been selected along with other non skipped items, the total duration of the selected items as displayed in the bottom right of the Schedule Grid is now correct. The duration of the skipped items are no longer included in the calculation as they were pre-fix. Also, when used with sequences the correct duration total can be displayed by selecting the sequence's header.

- **ITX-14163: Skipping an event before a fixed item did not show an underrun**

  When an event is skipped before a fixed event the schedule now shows an underrun.

- **ITX-14145: The As Run service stopped working after a long period of use**

  A small memory leak that was impeding the AsRun logs has been fixed and it no longer stops working after a long period of use.

- **ITX-14137: GPI take out of a Live event failed**

  A configured GPI for a Live event did not trigger the next item because the channel was unable to determine which event was on air. The generic on-air item is still not identified correctly in this situation and the Channel Control layouts still show incorrect information about the currently on-air item. However, the schedule is checked explicitly for an on-air Live event when GPI inputs are triggered and so the take out of the Live event is triggered as expected.

- **ITX-14136: Schedules with XG events were taking a long time to clone and save back to the system**

  The Channel Controller has been changed to make it more efficient when cloning schedules that contain XG events and reducing the time required to be less than 100ms.

- **ITX-14088: Animated Logos do not play the out transition**

  TZIP and SPG logos did not play their out transition because iTX adds all logos for two days duration and removes them when required, as GV Engine doesn't support on-air updates to logo duration. The resolution is to add SPG (and TZIP) logos for the actual schedule duration. This way they will play the out transition. These logos will not play the out transition if they are truncated, and they cannot be extended after Cueing.

- **ITX-14026: Boxing of PAC to XIF subtitles was not always present**

  When processing a PAC File with boxed subtitles the processed XIF file would not always display the expected subtitles as boxed. The code has been refactored to prevent this happening.

- **ITX-14023: PAC to XIF subtitles were not displayed in the correct vertical position**

  When processing a PAC file as an XIF file, some of the subtitles would be incorrectly displayed in the wrong vertical position on the screen. The vertical positioning has been corrected so that the subtitles are now displayed as expected.

- **ITX-13967: iTX was unable to parse short dates with separators other than forward slashes**

  Dates in user-typed timecode or time would be set to 1/1/1 if the user's culture had a short date format that used '.' or '-', instead of '/', to separate terms. iTX now accepts all possible date separators currently available

in Windows.

- **ITX-13959: Multi-site setups do not allow changes to the DST date and time on the secondary site**

  For sites with a geographic separation of the Main and Backup, the Channel Config Wizard tool now provides the ability to change the DST time/date for both the Main and the Backup simultaneously without the need to online the channels.

- **ITX-13939: Delivery Manager was not assigning language metadata to disordered tracks correctly**

  Delivery Manager now uses track identifiers to identify where language metadata should be assigned. Where no identifiers are available or meaningful, it returns to previous behavior (i.e. assuming that all audio tracks are in order, contiguous, and start at Track ID 1).

- **ITX-13887: Delivery Manager was not importing language metadata**

  RFC 5646 Spoken Language metadata is now supported and it is used in the absence of alternate track-specific metadata. The Delivery Manager no longer sets the default of 'Ignore Language Tags' to True.

- **ITX-13745: .mpg files were cached to the UMP device as .MPG**

  A new option has been added in the Media Cache Service that allows you to specify a UNC path as the target cache folder. Also, the Media Cache Service no longer needs to access the UMP cache via a symlink. To persist the -c command line option during upgrade, you must manually edit the file: %appdata%\TX\ITX Config\mediacache2config.xml and add a new key path with the full UNC path to the UMP cache share. For example:
  <MediaCache>
  <UKCAS1DT0498>
  <name>UKCAS1DT0498-CACHE</name>
  <path>\\10.118.200.109\umpa\Cache</path>
  </UKCAS1DT0498>
  </MediaCache>

- **ITX-13565: Items stayed in a cueing state after a schedule restore**

  If a cued event occurs during a schedule restore, the item is verified and updated to its actual state after the schedule restore.

- **ITX-13294: When playing out the .mcc file, the timing is incorrect compared to the scc file**

  When converting from scc files to mcc files, the converter (v4.1.0.2192) now correctly sets an out time.

- **ITX-13072: Time Service incorrectly used UTC date for all time zones**

  A Time Service linked to a VITC card would incorrectly reported the UTC date and local time to other iTX services; regardless of what time zone the system was in. This has been corrected and the Time Service now reports local time and date.

- **ITX-12306: Four new presets have been added for 1, 2, 3 and 4 Stereo Pair Encoding**

  Four new presets are available for 1, 2, 3 or 4 Stereo Pair Encodes:

IPCTemplate_MXF_XDCAM_HD_PCM_1_StereoPair.itxml
IPCTemplate_MXF_XDCAM_HD_PCM_2_StereoPair.itxml
IPCTemplate_MXF_XDCAM_HD_PCM_3_StereoPair.itxml
IPCTemplate_MXF_XDCAM_HD_PCM_4_StereoPair.itxml

Once imported into iTX via the Media Watcher Inbox, they appear in the Encoder Preset list as:

HD: MXF RDD9 (XDCAM) 1 Stereo Pair - Non-standard
HD: MXF RDD9 (XDCAM) 2 Stereo Pairs - Non-standard
HD: MXF RDD9 (XDCAM) 3 Stereo Pairs - Non-standard
HD: MXF RDD9 (XDCAM) 4 Stereo Pairs - Non-standard

- **ITX-11542: Enhanced VANC plugin did not allow various parameters to be set for channel control or channel configuration**

  Default options for the Enhanced VANC plugin did not allow various parameters to be set correctly for channel control or channel configuration. This included the splice_insert_type of manually scheduled splice requests.

  The Enhanced VANC plugin did not respect changes to the EnhancedSCTE.xml file that is supplied with TXPlay and the Channel Controller application. This file controls which user interface options are available to operators as configuration options and which options are available to operators when using the Enhanced VANC content selector and item editor.

  The plugin now obeys the file, correctly presenting the correct items in the config plugin, content selector and item editors. The same file resides with both TXPlay and the Channel Controller. Both should be updated to have the same content for a given channel. The default version of the file has been changed for both applications. This provides a user interface that meets most default use cases. Specifically, this includes the facility for the operator to select the splice_insert_type of splice requests.

- **ITX-11536: The frame that was set as the Out point cannot be viewed in the Asset layout's FPP Viewer player**

  In the iTX Desktop, the frame set as the Out point can now be viewed in the Asset layout's FPP Viewer.

- **ITX-11454: The default transition duration was being added to the recording duration**

  The default transition duration was added to the recording duration resulting in 1 second of a clip after a recorded live was added to the recording. The transition duration is now only added for x-fade mixes as expected.

- **ITX-8436: Server Controller was not saving its logging profile to the expected location**

  The Server controller was saving any logging profile to local appdata rather than the program folder. This prevented the manual method of editing the profile from working. This issue has been corrected and the logging profile can now be updated or replaced as documented.

Version v2.12 SP10.2 (build 3.212.10.900)

Fixes

- **ITX-14903: CG Clock shows incorrect time with manual takes**

  When a primary event containing a CG Clock is manually taken to air, the time displayed on the CG Clock is now the current time (including channel offset) rather than the initially scheduled time of the primary event.

- **ITX-14537: Entering timecodes for unpublished segments erroneously reported an error**

  Entering the in point, out point, or duration timecode in the Asset Segmentation layout for any unpublished segment caused an unhandled error and the field to became uneditable, despite retaining the information. The exception is now prevented and unpublished segments can be correctly configured without issue.

- **ITX-14511: Random Vyscheduler restarts causing color bars to go to air**

  A race condition resulting in a memory corruption caused problems for the filters downstream of the scheduler. During the few seconds time it took for the filters to restart, color bars would be display. This issue has been resolved.

- **ITX-14506: DVB subtitles were not output following a change to GV Engine**

  DVB subtitles are now output correctly.

- **ITX-14450: Subtitle events produced an error upon failover**

  Performing a failover/or schedule restore would cause the scheduled subtitle to fail after the media check had occurred. Now performing a failover once the schedule is on-air, no longer causes the subtitle to show as errored.

- **ITX-14369: Schedules were not updated on the backup channel of a channel pair**

  A problem prevented schedules from being passed between the main and backup channels. Now when a new schedule is added to the Network channel, the schedule is expanded when viewing one or other of the main channels.

- **ITX-14358: TXPlay2 stopped responding when using the Manual Control interface on the iTX Sports Application**

  TXPlay2 now fully responds when going from Live to a break pod in the Manual Control interface in the iTX Sports Application.

- **ITX-14356: Regardless of the sequence duration, the SCTE trigger lasts for 100 seconds**

  Previously, sequence durations with SCTE events weren't calculating the Break Durations correctly in deciseconds. The SCTE Sequence Break Duration now reflects the actual duration in deciseconds.

- **ITX-14355: Overrides of asset Source Format and Active Region data by scheduled Source Format and Active Region data were not obeyed**

  TXPlay playout of media assets would always follow the OPUS asset metadata for source format and active region regardless of any data supplied in the schedule that was intended to override that behavior. The behavior is now re-calculated at the point of playout so that the overridden behavior from the schedule is obeyed.

- **ITX-14236: Channel Failover service did not work with Live channels**

  Live channels now appear in the Engineering tab of the Channel Failover service. The Live channels must be disabled then re-enabled on the new builds in the TXPlay2 Config for them to be seen in the Channel Failover service.

- **ITX-14145: The As Run service stopped working after a long period of use**

  A small memory leak that was impeding the AsRun logs has been fixed and it no longer stops working after a long period of use.

Version v2.12 SP10.1 (build 3.212.10.896)

New Features

- **ITX-14226: Added zero frame transition support for DVEs**

  When scheduling a picture-in-picture (PIP) DVE, there's now a Zoom mode and a Transition Duration by default.

  Previously, the minimum transition duration was 1 frame for full frame to picture-in-picture. The 1 frame minimum has been removed and a new "Cut" button has been added that enforces a 0 frame transition.

Version v2.12 SP10 (build 3.212.10.894)

New Features

- **ITX-14031: The GV Engine log grabber tool was updated to version 1.0.1.29**

  The new version of the GV Engine log grabber tool collects Channel Controller logs and Media Cache logs. There is now an option for "Max zip entry size (MB)" of "No Limit" (this is also the new default) to ensure all files are collected regardless of file size. The "Max zip entry age (Days)" option is also now applied correctly. Note that the collection of the Output Server XML message logs is disabled by default. They can be collected using the "Output Server 2 (Commands)" option.

- **ITX-13949: Editing VANC Splicer event using Enhanced SCTE item editor left stale UI information**

  When scheduling Splice Request events using the VANC content selector "Splicer" command, items added to the schedule are converted to Enhanced VANC events in the schedule. The payload for these items refers to VANC event Splicer.xml payload rather than the EnhancedSCTE.xml payload of the Enhanced VANC events. This older set of data lacks fields supported in the newer controls. The data representing new features in the newer controls was left untouched by the data in the VANC splicer events.

  The user interface has been adapted so that these VANC Splicer events are identified and the information they do not support is now hidden from view. This was seen as preferable to presenting data that could never be edited.

- **ITX-13895: Channel Failover service**

  We have created a service to:

  Monitor the Output Server, Channel Controller and TXPlay services and routes the corresponding backup channel to air in the case where any of those services fail on the main channel (and vice-versa).

  Route the backup to air in the case where an item fails on the main channel (and vice-versa). Ensure that if the backup channel is manually routed to air on one site, the corresponding backup site is automatically routed to air.

  This functionality works with single domain, multi domain and multi platform modes. The configuration page is used to enter the name of the corresponding backup domain, the platform url and api on the service hosted on the main domain (and vice versa).

- **ITX-13738: Scheduling of Manual flag for generic CG Secondary events using BXF**

  The Manual flag for CG Secondary events can now be scheduled via BXF.

  Events scheduled with EventData\StartMode set to "Manual" have the Manual flag set in iTX. This affects all BXF events using the CG macro as documented in the latest version of the ITX BXF Implementation guide.

- **ITX-13133: Subtile File Converter can now convert from single to double height captions**

  Captions in EBU closed subtitle files can now be converted from single to double height and vice versa.

- **ITX-7648: Vantage 7 is now supported in iTX**

  Vantage 7 support has been added to iTX and Vantage jobs can now be processed.

Fixes

- **ITX-14052: When the source feed changed from 1080i to 1080p on air playout went black until GV Engine was restarted**

  When a change in the signal standard is detected upstream, GV Engine rebuilds its filter graph according to the new standard without adversely affecting on air behavior.

- **ITX-14038: TxPlay sequence events with Automatic Splice enabled failed**

  The Automatic Splice feature for sequences in iTX playout channel enables the automated insertion of SCTE 104 Splice Requests or SCTE 35 splice_insert commands. These events failed to insert the expected messages. The events now insert these messages as expected.

- **ITX-13958: BXF scheduling of Split Breaks could not be played by Output Server 2 sub- channel networks**

  Importing of BXF schedules uses the MacroParameter[2] element to specify the sub-channel for split breaks. The iTXML schedules produced by this were not generating the correct split break structure. While the structures generated could be played out using Output Server 1, they could not be processed by Output Server 2.

  Changes to the processing of the BXF schedule have been made so that the iTXML schedule structure is correct and therefore compatible with both generations of the Output Server.

  There are strict limitations as to what can be accepted in the Output Server 2 sub-channel implementation. The feature documentation is being updated with these restrictions.

- **ITX-13955: Audio output not mixed from Vertigo XG when a DVB subtitle output is configured**

  When using a DVB subtitle output, the audio from Vertigo XG was not being mixed and only had the PGM A output. GV Engine has been updated to address this issue to allow the full mixed audio output from Vertigo XG when using DVB subtitle outputs.

- **ITX-13850: Schedules were being duplicated when loaded into the schedule grid via the Schedule Auto Load function**

  When multiple schedules were loaded into the schedule grid using the Schedule Auto Load function, schedules were being duplicated in the schedule grid. The issue was intermittent, but it's occurrence would increase with the number of schedules and with longer Schedule Lookahead times.

The cause of the issue was due to the initialisation of the Autoloader occurring before the channel's playlist had been restored from the database. This meant that schedules were being appended as the channel playlist was being loaded. The fix is the Auto Loader first loads the schedule, once the schedule is completely loaded then the database operation begins.

- **ITX-13773: GV Engine does not configure ITXG for PAL_Wide & NTSC_Wide**

  Output server 2 can be configured for PAL WIDE by setting the output resolution to PAL and setting the aspect ratio to be 16/9 instead of 4/3. GV Engine now propagates the aspect ratio setting to ITXG so that it will run in PAL WIDE mode.

- **ITX-13743: Encode did not respect the aspect ratio of the template**

  The encoder now respects the aspect ratio properties of the template asset for the recorded clip.

- **ITX-13529: Channels configured to respond to SCTE messages with specific Format ID's were not behaving correctly.**

  Channels configured to respond to SCTE triggers containing a specific Format Identifier were defaulting to standard behaviour of rolling the sequence in manual hold on receipt of a non-specific SCTE trigger if the sent details did not exactly match the required format for the extended functionality.

- **ITX-13524: SCTE 104 splice requests were specified despite minimal BXF macro information**

  BXF scheduling of SCTE 104 splice request events processed by the VANC Event Driver in TXPlay provided valid SCTE 104 data on the output when only the splice_insert_type data was actually provided. The same events would not play out correctly using the TXPlay Enhanced VANC Event Driver.

  The default data in the enhancedscte.xml file has been altered to remedy this issue. Since the file is not overwritten by the default installation process, it must either be changed by uninstalling and ensuring the file is deleted on the target machine before re-installing TXPlay, or by manually copying the file from the installer into the same file in the TxPlay installation folder.

  This issue does not affect TXPlay2, but the file has been updated for TXPlay2 for consistency.

  Also note that a spliceStart_Immediate message is now generated if scheduled with no parameters.

- **ITX-13507: Take Next responsiveness was delayed for Channel Controller with heavy Enhanced SCTE104 usage**

  Where Output Server 2 channels had more than around 200 Enhanced SCTE 104 events in the playlist, Take Next operations would be delayed by a second or two. This would increase with the number of these events in the playlist.

  Copying of these kind of playlist events to store the new timings in the backup playlist schedule asset caused the delay. This copying process has been streamlined and normal responsiveness is retained with high numbers of Enhanced SCTE 104 events.

- **ITX-13506: Delivery Manager's Masstech driver would fail to delete assets from Masstech and fail to archive to Masstech if timeouts occurred**

  Deletions from Masstech would fail when attempting to delete Masstech assets that still had Masstech instances associated with them. Archiving to Masstech could also fail when timeouts occurred when checking the progress of the Masstech operation.

  The Delivery Manager Masstech driver has been changed to use common code to delete from Masstech in all cases. The Masstech Asset ID has been used for all deletion operations to ensure success if more than one Masstech Asset had the same Asset Alias.

  The timeout used to serialise access to the paging of results within Masstech has also been increased from 30 seconds to 60 seconds. The code handling timeouts has been changed to retry until the Masstech operation has either completed or failed.

  The pattern of behaviour used for restoring from Masstech has been applied to the archiving process.

  Logs have been improved so that the Delivery Manager job IDs can be identified at the level of the Masstech XML protocol commands.

  The cumulative effect of all of these changes is that archive and deletion of items from Masstech is now reliable and easy to diagnose.

- **ITX-13488: The playout of STL files occasionally displayed repeated characters**

  When an STL file contains a subtitle which has accented characters and also completely fills a row with text, the accented characters no longer cause repeated characters.

- **ITX-13424: Output Server 2 stops working when trying to configure more that 5 or 6 stereo pairs**

  You can now emit/configure more than 5/6 stereo pairs over 2110.

- **ITX-13408: Caching stopped when asset media was deleted from the system**

  When media is being cached and then deleted from the iTX system, caching is now stopped and the folder is deleted. When the asset is contributed again a new folder is created.

- **ITX-13394: A large log file output is produced for the Opus Service when the Channel controller is demoted**

  The VideoClipGetByKey, AssetNotesGetByKey and AssetExistsCheck log entries produced provided an Entry and Exit log for each item in the schedule when the Channel Controller was demoted. This action produced a large log file output for the Opus Service.

  These log entries are now within the Opus.Service.Data.Verbose logging category. This change produced a reduction in Opus Service log size when the Channel controller is demoted as this category is not written to disk with the default logging profile.

- **ITX-13354: HD channel was using Simulcast channel version of subtitle**

  Multiple HD and SD subtitle files can now be processed when using with Simulcast mode.

- **ITX-13346: SCTE 104 Splice End Requests would not trigger when using Availability Windows**

  When scheduling break sequences for external takes via SCTE 104 Splice Requests, availability windows can be scheduled to ensure breaks can only be taken to air when expected. If those windows do not overlap on neighboring sequences, then although the break sequences would be taken to air correctly with spliceStart_Normal or spliceStart_Immediate messages, using spliceEnd_Normal or spliceEnd_Immediate messages to take out of the break would not work.

  The break window logic has been altered to ensure the availabiliy window remains valid until the end of the on-air sequence. This means that the spliceEnd_Normal and spliceEnd_Immediate messages take effect as required.

- **ITX-13331: Macedonian language subtitles only partially played out on air**

  A change within the DVB Submux allows Macedonian language subtitles to now play as expected on air.

- **ITX-13328: iTX Channel Controller has failover capabilities**

  A new iTX Service has been introduced (The Channel Failover Service) which provides support for failover of channels when a service is unavailable in an environment where there is no HCO router. This new service is installed on the iTX Framework.

- **ITX-13319: Softel not clearing down multiple teletext subtitles**

  Softel SDK was not keeping track of all the teletext pages when multiple magazines were in use so when it comes to sending clears, some pages were not being sent.

- **ITX-13318: The first Subtitle (Sub 0) is not inheriting the 'Bold' flag as set in the Config file**

  The configuration settings for bold, italic and underline are now applied properly to the first subtitle.

- **ITX-13307: UMP plugin processing of SCTE 35 splice requests did not trigger sequences if the request contained a DTMF descriptor**

  If configured for neither Local nor National break triggers, the UMP Plugin for TXPlay2 incorrectly filtered out splice requests that included DTMF descriptors. This meant that commercial breaks were not taken to air when expected.

  The filtering of the triggers now accounts for the DTMF descriptors correctly and the breaks are triggered as expected.

- **ITX-13301: Live subtitling caused the Output Server 2 to stop working**

  The live subtitling plug-in no longer raises an exception that caused Output Server 2 to stop working.

- **ITX-13297: Missing Materials Manager's purge options were not deleting some asset records or proxy media**

If Missing Materials Manager had the purge option "Purge Clip (and media)" selected, some asset records would not be deleted. Asset records with media on external, archive or proxy Media Stores would remain in the system when the media is purged from the iTX media store.

This has been changed so that Missing Materials Manager deletes the asset regardless of any external, archived or proxy media that may be present.

This brings "Purge Clip (and media)" into line with the manual. Note that the media files on those stores will only actually be deleted if Delivery Manager has Endpoints that have been configured to do so.

If Missing Materials Manager had the purge option "Purge Media only" selected, proxy media would not be deleted. Missing Materials Manager would only remove the broadcast copy of the asset from the Media Store. It will now remove the broadcast copy and any proxy copy from the asset record and media store. The asset record will be left in the system. This is new behavior for "Purge Media only".

- **ITX-13230: Masstech Delivery Manager endpoint failed to archive files**

  The Masstech Delivery Manager endpoint used the Masstech Asset ID where it had indicated the Masstech Asset Alias would be supplied when tracking progress whilst archiving material. Masstech reported that no such transfer was in progress and the transfer was cancelled. The Masstech Asset Alias is now supplied correctly and the transfer succeeds as expected.

- **ITX-13227: Missing Materials Manager could not handle multiple zero length clips in a row in schedule**

  When all newly created events had the same start time, the sort mechanism did not distinguish between primary and secondary events in Missing Material Channel. The sort algorithm was changed so that it's now aware of primary and secondary events.

- **ITX-13214: Line21 captions fail to play out on air**

  A change was made to the header in the MCC file, which allows 608 and 708 captions to play on air as expected.

- **ITX-13120: Subtitles were out of sync with video/audio or sometimes not displayed**

  Open subtitle were being cached/queued up across event boundaries and output during the following event. To fix this problem, open subtitles are discarded at the end of an event boundary.

- **ITX-12926: After a disruption to System Service, AsRuns were only written to the database once TXPlay was restarted**

  When there are database connectivity issues on the Framework Server and the connection becomes stable, the license token is refreshed meaning the services on the framework are functioning and TXPlay writes the AsRun logs.

- **ITX-12891: UMP restore to air functionality failed if the cueing operation failed or was cancelled**

  During a resume-on-air operation when performing schedule restore, restarting the Output Server or UMP device, Output Server 2 could get into a state where no further cueing was possible without a restart of the Output Server 2 application. This would happen if there was a failure to cue or if a cue request was cancelled.

The UMP plugin of Output Server 2 has been modified to handle these situations gracefully where possible and in a fashion that is recoverable by a subsequent schedule restore where not.

- **ITX-12877: Teletext subtitle were displayed using random symbol characters**

  Output Server 2 has a new checkbox which when checked forces Teletext subtitles to use X26 packets to insert non-standard/accented characters into the subtitle text. This can be used where the standard Teletext National Option Characters (NOCs) are not recognized correctly by decoding equipment. If left unchecked the standard National Option Characters are used.

- **ITX-12750: Delivery Manager Masstech Endpoint did not support multiple file formats**

  A Delivery Manager Masstech Endpoint could not be configured suitably for Masstech assets containing varying file formats.

  The Media Extension field had been added to support Masstech Assets containing LXF files with no file extension.

  The configured Media Extension was added to iTX Asset metadata for all Masstech Assets. All would receive the same extension regardless of the files stored in the Masstech Asset. Masstech Assets containing files with other extensions would restore to the wrong iTX Store folders. Masstech Assets containing files with no extension would not restore at all.

  The Masstech Endpoint no longer applies the Media Extension to the iTX asset metadata. It now queries the Masstech Asset to find out which files are contained and only uses the Media Extension internally to support assets where there is a file that has no file extension.

- **ITX-12660: Sub-channel As Run entries were out of sequence**

  The As Run text output of all the sub-channels are now written in order of their sub-channel number and headed by the main channel.

- **ITX-12650: Live event field order was incorrect for SD channels using AJA 88 cards**

  When running Output Server 2 with two channels as a simulcast configuration with a HD and SD output, when a live event was used on air the SD channel would have the field order reversed on its output. GV Engine has been updated to correctly show the correct field order when using SD channels and live events. iTX 2.12 SP10 (and later) requires you to update to AJA Drivers 12.5.10.2 and GV Engine 2.1.1.164 as per the iTX installer for this release. iTX 5.0 (and later) requires you to update to AJA Drivers 14.3.2.1.

- **ITX-12629: Custom DTSS AsRun entries appeared in the wrong AsRun file**

  AsRun entries are now written to the correct AsRun file when an Item straddles midnight.

  For example, when playing out a Primary event starting before 00:00:00:00 (23:59:00:00) which contains a secondary item beginning at 00:00:00:00 and ending at the same time as the primary (00:01:00:00), both AsRun entries are written to the one correct file.

- **ITX-12463: Subtitle 0 was not played on air**

The first subtitle or subtitle 0 that has an 8 frames length or 0 duration is now considered as metadata and is not transmitted.

- **ITX-12324: Secondary record did not persists when a Live Event was replaced by another Live Event**

  When a Live Event that is marked for secondary record has been replaced by another Live Event, the secondary record now persists on the new Live Event.

- **ITX-12267: Items replaced using the Find and Replace function were not retaining their user data**

  When an Item containing user data was replaced with another asset, the item's user data was not retained. This applied to both single and global asset replacement across single and multiple channels.

  Now when an item is replaced in a schedule, all of the schedule details are preserved whilst replacing the specific item.

- **ITX-12249: Studio Countdown crashed when connected to Network channels**

  The newtonsoft.json.dll has been added to the install script for the application and is now correctly installed alongside the application. The application now connects correctly to Network channels.

- **ITX-12239: The status of a DVE template was Ready instead of Cued, which caused a Take delay**

  Upon enabling and presetting an Output Server to use a DVE template, the DVE is now correctly cued for all channels and no delay is experience when the DVE is taken to air.

- **ITX-12233: Delivery Manager does not process media dropped into the inbox and fails with a parsing error**

  Assets are successfully ingested even if the Asset Metadata for the "UKDPP_Video_Comments" field is longer than 100 characters.

- **ITX-12214: Channel flashed on air when switching to a live or when switching between main and backup**

  The Output Server has been changed to announce itself as ready by passing a message to DeviceController so it can can re-apply timing configuration and thus ensure that the values set are applied on any restart of the services.

- **ITX-11790: X31 cue events imported through iTXML schedule files would fail to load**

  When loading a schedule containing X31 cue events into a TXPlay2 channel using the Schedule Management component "Import from Disc" feature, those items would fail with the message similar to "Handling item 'VANC' (id 115628) failed. Exception : System.NullReferenceException".

  TXPlay2 has been altered to process these items correctly.

- **ITX-11688: If a GPI-1501 device timed out and failed to respond, the GPI service would not attempt to reconnect**

  In previous versions of the GPI service, there was no mechanism for re-establishing contact and re-sending the commands should a device go 'off-line' or time out while in use by a channel. This has now been addressed, making the GPI service more robust and device status aware. The version of the GPI-1501 firmware that this fix was implemented against is 1.0.0.RC-6.

- **ITX-11657: BXF properties were not set on BXF recall**

  The BXF sequence would not show any of the properties in the Event Details window for sequences. For example, when the Availability Window was set with the BXF file, whether in Fixed or relative, it would show default values.

  Now when the Availability Windows is set with the BXF file, it shows the correct values.

- **ITX-11550: When a scheduled daughter clip was deleted from the system all other related clips would lose the link to the parent**

  With a schedule containing daughter clips, when one of the daughter clips is deleted from the system no other related daughter clips will now lose the link to the parent and thus be still shown as ready and avaliable.

- **ITX-11424: BXF Importing Schedules was not showing length of time in search**

  The BXF Schedule import was not set up to obtain the length of schedule.

  For example, when the schedule came in with a Schedule Start Time of "2019:09:17T11:00:00Z" and a Schedule End Time of "2019:09:17T11:01:00Z" with a frame rate of FR30DF, its duration should show "59" (exact figure should be 59:28), but instead it showed "00:00:00".

  Now duration shows has 00:00:59.

- **ITX-11205: Channel GPI events failed to resolve when loading from disk**

  Whilst a specific channel was being controlled, if any configuration for any channel was modified, the Schedule Management control could lose the Schedule Import Configuration. From that point onwards, no further Channel GPI events would successfully load until the iTX Desktop was restarted. Changes have been made so that configuration changes are now handled correctly.

- **ITX-11139: Logos could not be edited following a re-ingest**

  Logos already registered in iTX and present on the iTX Desktop's Schedule Grid can now be edited following a re-ingest, without having to press 'Store Changes'.

Version v2.12 SP09 (build 3.212.9.818)

New Features

- **ITX-13039: As Run BXF Plugin provides PrivateInformation supplied in BXF schedules**

  Any XML element supplied in incoming BXF schedules with the path \ScheduleElements\Content\PrivateInformation will also be written to the BXF As Run files path \AsRunDetails\Content\PrivateInformation.

- **ITX-13003: Some log messages during the import of an invalid BXF schedule were unclear**

  Error messages may have been ambiguous or unclear when importing BXF schedules that generated invalid iTX Asset XML during the import process.

  All iTXML validation messages are now presented so that engineers can see all problems on initial import. Some logic validation messages have been clarified.

- **ITX-12606: BXF Import support for Join in Progress events**

  The Schedule Processing service now supports the importing of BXF 1.0 and 4.0 schedules with Join in Progress events. Note that Join in Progress is only available on video, music, and live events. For more details, see the BXF Implementation Guide.

- **ITX-12600: BXF Import support for Auto-Duration on secondary events**

  The Schedule Processing service now supports the importing of BXF 1.0 and 4.0 schedules with secondary events with auto-duration. For more details, see the BXF Implementation Guide.

- **ITX-12599: BXF Import support for Auto-Duration on Live events**

  The Schedule Processing service now supports the importing of BXF 1.0 and 4.0 schedules with live events with auto-duration. For more details, see the BXF Implementation Guide.

- **ITX-12393: Break segments can be taken automatically on receipt of a SCTE trigger**

  On a regional iTX channel, it is now possible to have specific break segments take automatically on receipt of a SCTE trigger in the Live SDI feed that contains the appropriate break segment ID. When there is content scheduled in the regional channel ahead of the triggered break, that content, including all other breaks, is skipped and the triggered break is taken to air.

  The Automatic Splice button in the iTX Desktop allows you to automatically add splice start and end events to a sequence on the region. Similarly, selecting the sequence header in the schedule grid and enabling the Automatic Splice option at the bottom of the Content Selector allows you to automatically add a Splice Start and End event to a sequence.

  To automatically take regional breaks based on an ID in the splice event coming from the national channel, you must enable the Take Sequence option in the Break Trigger Type section of the Output Server service's Configuration tab.

- **ITX-12100: Site Replication for Secondary Record**

  Secondary records on a dual site system no longer have a "-BACKUP" on recordings made on the "-BACKUP" channel. However, secondary records made on a main and back up channel, single site system do continue to have "-BACKUP" appended to the recordings.

Fixes

- **ITX-12904: DDS Disable setting was not applied when the Canvas Override setting was set**

  The DDS Disable checkbox (DDS => Display Definition Segment) was previously accessible from the Global DVB Subtitle Options dialog has been moved to the service specific DVB subtitles Config dialog.

  The DDS Disable checkbox must be selected manually on a per DVB subtitle service basis to disable the output of the DDS for SD subtitle channels which are broadcast on a HD iTX channel.

- **ITX-12851: The Ingest Control service cancelled an Encode Service recording after 2 seconds**

  Recordings were failing if it took more than two seconds to initialize the recording. Changes were made so that recordings are now checked for validity once the recording has started.

- **ITX-12822: Random line items on the Backup schedule reported the items as not loaded**

  Extra protection has been built into TXPlay to prevent this issue from occurring.

- **ITX-12816: Encode Service only encoded 24 hours of media before requiring a restart**

  After encoding a total 24 hours of media, the in-progress record job would be truncated. Instructions to GV engine have been changed, so that the record job only completes in this fashion after 24 hours for that individual encoding.

- **ITX-12791: Dragging and dropping primary items with secondaries resulted in the sub channel becoming out of sync**

  The drag and drop functionality has been improved so that this issue no longer occurs.

- **ITX-12659: The main channel can get out of sync with sub channel when using Fixed start times**

  A fix has been made to TXPlay so that main channels and sub channels stay in sync when using Fixed start times.

- **ITX-12658: Occasional loss of audio on sub channels**

  TXPlay has been amended so that it is no longer possible to lose audio on the sub channels in this way.

- **ITX-12656: Unable to save a schedule after it was edited**

The specific schedule that was reported as unable to be saved to the database after modification using an Edit Channel is now able to be modified as expected.

- **ITX-12634: Sub channels can run out of memory if cache media checks are not completed before the next schedule restore**

  A number of performance improvements were made around the schedule restore procedures for sub channels.

- **ITX-12593: Live Events failed when multiple live events were cued at the same time**

  The Live Event Input Manager was changed to stop more than one event writing the status file at the same time.

- **ITX-12446: Partner services not reconnecting after a network interruption**

  Partner services now reconnect with a remote Locator when a network interruption is resolved.

- **ITX-12317: BXF As Run plugin could write items to the wrong As Run file if one of the files were inaccessible**

  If an As Run file for a channel was inaccessible, As Run data is cached temporarily by the plugin responsible for writing the data. The cached data was stored in a single repository for all channels. The first channel that subsequently wrote As Run data would write all of the cached data regardless of the channel it came from.

  The cached data is now stored on a per-channel basis. Cached data is only written to the As Run file for the correct channel.

- **ITX-12221: Restore jobs not handled correctly if CIFS endpoint becomes unavailable**

  Delivery Manager is now able to handle scenarios in which a CIFS endpoint becomes unavailable whilst a restore job is in progress.

- **ITX-11851: Live events or Video Assets cannot be scheduled as Secondary events in a BXF Schedule**

  BXF 1.0 and BXF 4.0 now support the addition of Primary/Secondary events (and PIPs) via GVE or Vertigo XG. Previously, this was only supported via ITXML.

- **ITX-11520: The iTX Desktop's Timeline glitched upon SCTE External Take**

  The iTX Desktop's Timeline no longer becomes out-of-sync with TXPlay if an on-hold sequence is taken after a live via a SCTE trigger.

- **ITX-11517: Schedule Processing Service cannot be used as a load balanced service**

  Schedule Processing Service can now be load balanced across two services to share the workload.

The 'Concurrent Processing' option on the Schedule Processing Service Configuration dialog must be checked on both Schedule Processing Service configurations for the workflow to be triggered. Note that when 'Concurrent Processing' is checked, the Update and Rename checkboxes are disabled.

- **ITX-11322: Incorrect warnings for Aspect Ratio / Source Format**

  The schedule's original Active Region/Source Format settings are now correctly used when checking against an asset's settings and the correct warnings are generated as a result.

Version v2.12 SP8.1 (build 3.212.8.785 Hotfix- ITX-12393-Take-From_SCTE.2551)

New Features

- **ITX-13039: As Run BXF Plugin provides PrivateInformation supplied in BXF schedules**

  Any XML element supplied in incoming BXF schedules with the path \ScheduleElements\Content\PrivateInformation will also be written to the BXF As Run files path \AsRunDetails\Content\PrivateInformation.

- **ITX-13003: Some log messages during the import of an invalid BXF schedule were unclear**

  Error messages may have been ambiguous or unclear when importing BXF schedules that generated invalid iTX Asset XML during the import process.

  All iTXML validation messages are now presented so that engineers can see all problems on initial import. Some logic validation messages have been clarified.

- **ITX-12646: Sequence name is supported in BXF 4.0**

  The sequence name can now be specified as a MacroParameter String within the sequence schedule event. When imported via the Schedule Processing Service's BXF Inbox and appended to a channel, the <MacroParameterString> field data is displayed as the sequence's Item Name. For more details, see the BXF Implementation Guide.

- **ITX-12393: Break segments can be taken automatically on receipt of a SCTE trigger**

  On a regional iTX channel, it is now possible to have specific break segments take automatically on receipt of a SCTE trigger in the Live SDI feed that contains the appropriate break segment ID. When there is content scheduled in the regional channel ahead of the triggered break, that content, including all other breaks, is skipped and the triggered break is taken to air.

  The Automatic Splice button in the iTX Desktop allows you to automatically add splice start and end events to a sequence on the region. Similarly, selecting the sequence header in the schedule grid and enabling the Automatic Splice option at the bottom of the Content Selector allows you to automatically add a Splice Start and End event to a sequence.

  To automatically take regional breaks based on an ID in the splice event coming from the national channel, you must enable the Take Sequence option in the Break Trigger Type section of the Output Server service's Configuration tab.

Version v2.12 SP8 (build 3.212.8.785)

New Features

- **ITX-12524: New versions of GV Engine and AJA card drivers**

  This release of iTX includes a new version of GV Engine v2.1.1.150 and AJA card drivers v12.5.10.2. Both are available within the iTX installation kit.

- **ITX-12435: Use of Nominal flag conforms to SMTE specification in BXF 4.0 schedules**

  In BXF 1.0 schedule imports, the logic for the functionality of the Nominal flag was reversed. This has now been fixed in BXF 4.0 where setting the Nominal flag to false causes the 'Hold Duration' flag to be set in the imported schedule. This means that this duration is fixed by the schedule and cannot be overwritten by the duration on the asset. Note that the behavior in BXF 1.0 has been left unchanged to keep backward compatibility with existing systems.

- **ITX-12416: BXF Comments are supported by the Schedule Processing service**

  Comment events can now be imported via BXF 4.0. The name of the Comment event can be taken from the HouseNumber, AlternateId or Isan fields (in that order) of the ContentId element, or it defaults to the name 'Comment' if none of those are specified.

- **ITX-12405: Scheduling and playout of subtitle/caption files for a live event**

  iTX now supports the scheduling and playout of subtitle/caption files for a live event. When embedded subtitles/captions are present in a live feed, it is sometimes necessary to suppress those subtitles/captions. This suppression is achieved by scheduling a special 'blank' subtitle/caption file that contains no captions. Generally, this 'blank' file contains at least a single subtitle 'clear'.

- **ITX-12392: Automatic generation of SCTE triggers on a sequence start and end**

  It is now possible to schedule SCTE splice start and end normal triggers on a sequence via BXF.

- **ITX-12219: Replacing Master Control events with different event types within the Schedule Grid**

  Support is now provided for the following find and replace operations within the Schedule Grid:

  Master Control event replaced by a Video clip.

  Master Control event replaced by a Live event.

  Video clip replaced by a Master Control event.

  Live event replaced by a Master Control event.

  Note: A Master Control secondary event must be manually updated. Find and Replace is not supported.

- **ITX-12218: Replacing events with different event types within the Schedule Grid**

Support is now provided for the following find and replace operations within the Schedule Grid: Video clip replaced by a Live event.

Live event replaced by a Video clip.

Note: Subtitle secondaries attached to Media events are maintained when the media event is changed to a Live event. Also, currently replacing a Video clip with a Live event using a Placeholder does not update the Event Type on the Schedule Grid and vice versa.

Fixes

- **ITX-12663: Items failed to take for several seconds during a schedule update**

  GPI Take Next takes correctly, regardless of schedule update status

- **ITX-12566: The playout of a recorded Ingest job on a Sub channel fails when the recording finishes**

  To fix this issue, iTX no longer reloads the sub channel live event if it is on-air and the recording finishes.

- **ITX-12551: The duration was incorrect for when a "Find and Replace All" was performed on Live events**

  The original Live event's Duration is now used when a "Find and Replace All " is performed on a Live event.

- **ITX-12499: Sub channels ran out of memory due to live item caching after the schedule was reloaded**

  A number of performance improvements were made around the schedule restore procedures for Sub channels.

- **ITX-12443: Audio on Live events dropped out**

  When the a Live Event is in a cued state and the duration is changed to be extended, a schedule restore now occurs and the Live Event plays out with audio for the full duration specified.

- **ITX-12431: UMP was held in Cueing state following a resume on air**

  The UMP is no longer held in a Cueing state following a disconnect from the UMP server during the resume on air process.

- **ITX-12424: The Main and Sub channel became out of sync when using auto duration live**

  The Main and Sub channels now stay synchronized when the auto live duration is used on a Live event and the duration has been extended on the Live event.

- **ITX-12418: Scheduling a clip as a placeholder passed a zero duration to the Sub channel**

  When scheduling a clip as a placeholder with an existing clip in the system, the duration is now passed to both

the Main channel and the Sub channels.

- **ITX-12318: The cancellation of recordings crashed the Encode Servers**

  The cancellation command for ingests now sends cancellation messages at the correct time to avoid infinite loops on the Encode Server and allows the cancellation to complete successfully.

- **ITX-12161: Media Cache would not retry the cache operation following a disconnect to NAS storage**

  If the Playout Server connection to the NAS storage is interrupted during the first attempt to cache an asset, when the connection to the NAS is re-established, the Media Cache service now attempts to recache the item.

- **ITX-12149: The As Run service stopped working after a long period of use**

  A small memory leak was fixed in the As Run service and it no longer stops working after a long period of use.

- **ITX-11987: UMP Output Server marked up SCTE messages even if they did not trigger**

  UMP Output Server marked up the event_id of passthrough SCTE35 SpliceRequest messages, despite the sequence matching the SCTE message having already been expired.

  Now the subsequent message is not marked up when the sequence is taken to air, even if it matches the event_id of previous messages.

- **ITX-11897: iTX was unable to play certain assets whilst they were being imported via Delivery Manager**

  The specific assets that were reported as unable to be played out whilst iTX was importing them using Delivery Manager are now able to be played out as expected.

- **ITX-11876: Subtitles are placed erroneously at the bottom of the screen when converting from PAC to closed STL**

  A closed tag can now be added in the xif_config.xml file for setting closed overrides for VerticalPosition (Top, Middle and Bottom).

Version v2.12 SP7 (build 3.212.7.755)

New Features

- **ITX-12186: The "Keep User Data on copy" setting was added to the iTX Desktop's System Wide Config**

  The "Keep User Data on copy" setting on the iTX Desktop's System Wide Config provides operators with greater control of the retention of billing references.

  Always - Persists all user data regardless of whether the same item is already present on the Schedule Grid.

  Once - Persists user data for the first instance of an item on a Schedule Grid. No user data is persisted for further iterations of the same item. This action persists for all instances of the first item including Skipped, Failed and Done. The Once operation will again allow user data for an item to be persisted once the same item containing user data is no longer present on the Schedule Grid.

  This feature applies whether items are cut, copied, pasted, appended or dragged into the Schedule Grid of an Edit or Network channel. Standard, ITXML and BXF AsRun Logs will reflect the user data on the Schedule Grid.

- **ITX-12164: End points in the iTX Delivery Manager Configuration have a new Audio option called "Group Audio Tracks by Language Tag"**

  Audio option called "Group Audio Tracks by Language Tag" has been added to the End Point settings in the Delivery Manager Configuration. This option groups separate audio tracks, with a total of six PCM channels, into one logical 5.1 PCM group. The tracks must have the same, non- empty Language metadata, to be grouped together. This option is only available when used without "Apply Audio Import Rules" and it disables the "Group Mono Tracks" and "Ignore Language Metadata" options.

- **ITX-12077: Options were added and removed from the External DVB Configuration**

  Two new options have been added to the External DVB Configuration (Configure Output):

  Normal Mode For Clears - The DVB page is set to 'Normal' mode for subtitle clears.

  Subtitles Contain Full CLUTs - Applies a full list of CLUTs (Colour Look Up Tables) on all subtitles. This ensures a CLUT is supplied for all subtitle rows regardless as to whether they contain text.

  The 'Generate Acquisition Modes' option has been removed.

Fixes

- **ITX-13488: The playout of STL files occasionally displayed repeated characters**

  When an STL file contains a subtitle which has accented characters and also completely fills a row with text, the accented characters no longer cause repeated characters.

- **ITX-13318: The first Subtitle (Sub 0) is not inheriting the 'Bold' flag as set in the Config file**

  The configuration settings for bold, italic and underline are now applied properly to the first subtitle.

- **ITX-12904: DDS Disable setting was not applied when the Canvas Override setting was set**

  The DDS Disable checkbox (DDS => Display Definition Segment) was previously accessible from the Global DVB Subtitle Options dialog has been moved to the service specific DVB subtitles Config dialog.

  The DDS Disable checkbox must be selected manually on a per DVB subtitle service basis to disable the output of the DDS for SD subtitle channels which are broadcast on a HD iTX channel.

- **ITX-12148: The In Point was incorrect when an ingest was performed using Override Timecode From Source**

  The In Point is now set to the exact start time of the event when an ingest is performed using the "Use Time of Day" setting.

- **ITX-12075: The iTX Desktop became unresponsive while scrubbing a video clip in the Asset layout's Media Viewer**

  Scrubbing a video clip in fast forward or rewind no longer causes the iTX Desktop to become unresponsive.

- **ITX-12056: BXF Schedule Service failed when items were taken or subchannel items were edited**

  The BXF Schedule Service correctly shifts the start time for items that have been taken early, and will correctly record the parent IDs of subchannel items when they are edited or taken. The service trace log no longer display errors when either of these scenarios occur.

- **ITX-12021: Greenfield install causes TXPlay exception when items are added to schedule grid**

  Fixed an issue where a greenfield install would throw a TXPlay exception when items are added to the schedule grid.

- **ITX-11941: Missing Materials Manager failed when a schedule was deleted during a purge**

  Missing materials Manager no longer fails if a schedule is deleted whilst it is purging. The Missing Materials Manager handles the exception by assuming that the schedule has been deleted if it is not found in the database.

- **ITX-11929: Missing Materials Report Transform Filename was not updated**

  The Missing Materials Report Transform Filename field was displaying as empty after the M3_CsvTransform.xslt config file is saved. The field now correctly updates when the Missing Materials Application is restarted.

- **ITX-11892: The iTX Desktop occasionally lost its connection to iTX channels when under a heavy load**

  To improve stability, a different mechanism is now used to maintain the connection between the iTX

Desktop and the iTX Channels.

- **ITX-11810: Unable to sync iTX with MassTech archive when asset title contains curly braces**

  The MassTech end point logging has been made resistant to strings containing curly braces.

- **ITX-11791: Memory leak experienced for Teletext subtitles with progressive video signals**

  The leaking objects are now only allocated when required and deleted as they are created.

- **ITX-11670: Schedules supplied via BXF Web Service do not populate Billing Reference information for BXF As Run**

  A fix has been done to ensure that Billing Reference is now included in the BXF As Runs

- **ITX-11633: Scheduling VizRT events via BXF Web Service did not support VizRT Multi- channel Page IDs correctly**

  VizRT Multichannel events scheduled via the BXF Web Service would not play to air correctly.

  The PageID field as imported no longer includes the supplied Primary Uuid and only contains the supplied Event Uuid. The resolution of issue may prevent playout of VizRT Trio events if scheduled via the BXF Web Service.

- **ITX-11628: Inventory Service ended a sync cycle on a deleted asset**

  If a locked asset is deleted from the archive store, it no longer stops the Inventory Service from processing subsequent assets.

- **ITX-11627: Adding audio tracks to Live events configured with multiple audio groups duplicated the first group of audio tracks**

  In 2.12 an issue was introduced whereby Live events configured with multiple audio groups duplicated the first group of audio tracks across all outputs.

  All newly created Live assets configured with multiple audio groups now play out according to the channel's configuration.

  Note that any previously created Live assets must be loaded and saved in the Audio Program Groups Editor dialog, which is accessed by pressing the Edit button in the Audio Tracks (Logical) section of the Asset Property Editor.

- **ITX-10942: Missing Material Manager could not find the missing material for XG events**

  When XG is included in the "Types to Check" setting in the Missing Materials Manager's Search Filter, Missing Material Manager will now acknowledge missing XG events and also clears them from the list when the assets are found or created.

Version v2.12 SP6 (build 3.212.6.729)

New Features

- **ITX-12005: Language tag support for AS02 MXF files**

  Support has been added for the reading of language tags in AS02 MXF files when processed through Delivery Manager.

Fixes

- **ITX-11966: Triggering a Vizrt event caused the start and duration of Vizrt graphic events to be inaccurate by more than a single frame**

  The commands controlling the Vizrt device are now sent in such a way as to ensure that the commands are carried out within a frame of the expected time.

- **ITX-11910: GV Engine slots filled up when Live events are cued from the Roll Under Live Channel**

  GV Engine slots are now freed up when Live events, that are cued from the Roll Under Live Channel, are deleted from the Live Channel.

- **ITX-11904: BXF schedule did not update when a Sub Channel item was updated in the Schedule Grid of an iTX Network Channel**

  A BXF schedule imported via the BXF Schedule Sync Service now updates for Sub Channel items modified in a Network Channel's Schedule Grid.

- **ITX-11900: External Subtitle does not auto populate on the Network Channel**

  External Subtitles are now supported using the Network Channel setup.

- **ITX-11896: iTX Ingest Control service started recording several frames late**

  Instructions to begin recordings were issued at the time that the recording should have started. This led to the recording actually starting 12 to 14 frames late. If a recording was requested for 10:00:00:00, then the first frame in the output file would be 10:00:00:12.

  Recordings are now synchronized with the GV Engine internal clock so that the requested frames are present. If a recording is requested for 10:00:00:00, then the first frame in the output file is now 10:00:00:00. The requested duration of video is also correctly recorded.

- **ITX-11883: Alternating between SD and HD Live events failed to playout the Live event**

  A Live event playing out or having played out, followed by a video clip and another Live event of a different resolution, no longer results in the Live event failing to go on air. To allow time for a route to

be created for the second Live event, it is still necessary for a primary item, such as a video clip, to be present between the two different resolution Live events.

- **ITX-11842: Certain LXF files could not be parsed correctly causing the analysis and playback to fail**

  Changes to the parsing mechanism now allow these LXF files to be opened correctly.

- **ITX-11797: Items were stuck in cueing when using Cue to First Frame with Roll Under/Live Channels**

  Channels have now been changed to not automatically 'cue to first frame' when in a Roll Under state (e.g. Live channels when the Main is currently active). Cue to first frame is only actioned once the channel is made active.

- **ITX-11749: Changing a schedule caused a cued Live event to fail**

  While a Live event was cued, performing a schedule restore would leave the event in a state where it would fail at its commit point.

  The routing information of any cued Live event (including cued Sub Channel replacement items) is now retained during a schedule restore. This allows the Live event to go to air successfully after any schedule restore.

- **ITX-11743: Logo ON and Logo OFF did not match correctly**

  Logo ON and Logo OFF sometimes did not match correctly if there was more than one possible match. The pairing logic was updated to check logo layers, to not match on a template if it is empty, and to match the nearest valid logo.

- **ITX-11719: In certain circumstances, the last item of the broadcast day was missing from the BXF AsRun logs**

  The last item of the broadcast day is now always written to the BXF As Run logs.

- **ITX-11708: Co-reference Frame Rate does not update when media is contributed**

  When media is contributed, some metadata was being updated on the parent asset, but not the co-references.

  Now all co-references are loaded and the ProductionDate, FrameRate, SourceFormat and Active Region are updated at the same time as the parent asset.

- **ITX-11555: A Schedule or Sequence Search defaulted to the channel's domain and not the required Local iTX Desktop domain**

  Schedule Management control now uses the Local iTX Desktop domain; not the Channel's domain. Performing a search from the Schedule and Sequence tabs on the iTX Desktop now also defaults to the Local Desktop domain.

NOTE: A Search performed from the Asset layout still uses the last selected Domain Selection Criteria, until the iTX Desktop is restarted, at which point the Local Default Desktop Domain is selected.

- **ITX-11551: Animated logos did not use the Duration value when added to the Logo Selector palette**

  The duration of a selected logo is now persisted in the Duration field of the Logo Selector palette. Also, selecting different logos in the Selector palette updates the field with its assigned duration.

- **ITX-11481: A secondary Live PiP appeared in the Schedule Grid following a SCTE triggered Sequence and iTX Desktop restart**

  Triggering a SCTE triggered Sequence that contains a video clip and a Live event and then restarting the iTX Desktop, no longer adds a secondary Live PiP (Picture in Picture) 'Done' event to the Schedule Grid.

Version v2.12 SP5 (build 3.212.5.691)

New Features

- **ITX-11638: Growing file media event extends automatically**

  When an ongoing secondary record is scheduled in another channel and it extends beyond its original scheduled duration, then the media event automatically updates its duration after every 20 seconds.

- **ITX-11617: ANC track playback can now be disabled on Output Server 2 channels**

  When upstream data contains a redundant ANC track as well as VBI encoded subtitles, selecting "Disable ANC Track" on the Output Server 2 Configuration dialog disables the ANC track to allow the VBI subtitles to be passed through to the playout stream. By default, the setting is cleared and allows subtitle processing of the ANC track.

- **ITX-11599: 8-bit support for GV Engine in iTX 2.12**

  In iTX 2.12, 10-bit data processing in GV engine became the default. A configuration option has been added to Output Server 2 to allow GV Engine 8-bit support for servers that cannot support 10- bit data processing. The default is 10-bit operation. If Vertigo XG is present on the Output Server, this option is not available as Vertigo XG only supports 8-bit operation.

- **ITX-11568: 'Time Mode Value Fixed Manual' option has been added to the iTX Desktop's Color Configuration pop-up**

  While Color Configuration options already existed for 'Time Mode Value Fixed' and 'Time Mode Value Manual', items that have time mode "Fixed" but have the "Manual Hold" flag set were not be easily identified since both conditions applied to those items.

  The 'Time Mode Value Fixed Manual' option has been added to allow these items to be visually distinguished.

  The 'Time Mode Value Fixed Manual' option defaults to the same color as 'Manual' so that existing color settings are retained.

  All items with the "Manual Hold" flag set will transition to this color when they are taken to air, which correctly reflects their state within TXPlay 2.

  Within channel Timeline controls on the iTX Desktop, the triangle representing the 'Fixed' nature of the item will remain green (existing functionality). The Color Configuration options do not currently affect the red and green triangles that reflect Fixed and Manual items in those controls.

- **ITX-11556: DTSS SDS As Run Plugin provides standard 24h time information**

  The Omnibus pipe-delimited As Run protocol would represent times after "station midnight" as continuing on the same date but with times greater than 24h.

  All dates and times for this plugin have been updated to provide standard dates and times.

- **ITX-11441: ServerController.exe.config file is no longer overwritten upon upgrading the iTX Server Controller**

  If it already exists during installation, the ServerController.exe.config file is not overwrriten. As a result, the

existing settings from that file are retained on upgrade. In particular, this includes the LowDiskSpacePercentage alert setting which is commonly set to a low value on Output Servers as their cache usage consistently means that the alert is triggered at the default 10%.

- **ITX-11336: Channel Controller Health will now error if TXPlay Routing is not configured**

  If any of the following fields are not configured for either a Single, Main or Backup Output Server for a Single or Dual site, then an Error Message is flagged for the Single, Main and Backup Network Channel Controller Services:

  From iTX Desktop > Engineering > Channel Config > [Channel] > Channel Config 3 > Routing:

  Matrix

  Channel Output

  Channel Destination With the message being:

  'Routing source or destination not configured for channel [Channel Name] on local domain.'

- **ITX-10556: Dual Site Control support for Live Controls**

  Dual Site Control now allows operators to successfully use Live Logo, Caption, ALC and Fill and Key controls in a Dual Site environment.

Fixes

- **ITX-11699: Channel Controller produced an exception error because a backup channel was not configured**

  On the backup channel, if the channel has not been added to the channel network configuration, then a channel health warning is produced instead of an exception error.

- **ITX-11682: Schedule XML StartTime of mastered asset didn't start from 00:00:00.000**

  The schedule XML describes the schedule that is played out on the mastering node for an On- Demand job. If the job has the same channel configuration as the previous job, the mastering node is now restarted after every job, so the schedule starts from zero.

- **ITX-11653: Certain GFX video files were not successfully processed by GV Engine**

  GV Engine is now able to correctly seek when preparing to play GXF media where the ANC data track is shorter than the rest of the tracks within the media. As well, GXF media can now read if the number of fields in the last ANC packet is 10 or 14, which the standard states as the only possible values. ITX-11640: The GPI card in a Densité 3+ frame caused the iTX GPI service to stop and produce an error**.**

  The iTX GPI service no longer crashes or causes an error when it requests the status of the Densité frame (24 slots).

- **ITX-11637: Truncating a Live recording event with 'Take Next' did not update the duration of that clip playing on other channels**

  The duration of a growing file on a Network channel is now updated when the recording is completed on the

recording channel.

- **ITX-11636: The duration component was miscalculated in the iTX On-Demand Schedule XML output**

  When iTX On-Demand wrote the schedule XML output, the millisecond component was padded incorrectly if less than 100 milliseconds, so 0.080 would become 0.8000. The iTX On-Demand XML formatter has been changed to report milliseconds correctly to three significant figures.

- **ITX-11604: Proxy versions of certain 4K ProRes video files could not be generated**

  Changes GV Engine have resulted in these specific 4K ProRes video files now being able to be transcoded to produce proxy versions.

- **ITX-11593: The Manual Promote button is not displayed in the Channel Controller Engineering page unless ALC or Fill & Key is licensed**

  The 'Manual Promote' button is now displayed in the Channel Controller Engineering page regardless of whether ALC or Fill & Key is licensed.

- **ITX-11585: Shortening the On Air schedule in the Network channel resulted in time gaps**

  After removing the last item from the on air schedule, the schedule event's duration now correctly changes to reflect the new duration of the items in the schedule, rather than continuing to reflect the original duration.

- **ITX-11576: Copy and pasting between channels caused future schedules to be corrupted**

  When items are copied from one schedule to another, the Channel Controller now automatically updates the schedule's Chainedby field when the item's id is updated. This update resolves the schedule corruption issue.

- **ITX-11563: Live events on the Network channel were not truncated on Take**

  The Channel Controller and the TXPlay channel are now synchronized so that the Live event terminates correctly when a Take is performed.

- **ITX-11561: Secondary events scheduled using BXF "AUXCH" schedule import did not reflect start offsets**

  When scheduling items using BXF "AUXCH" option, events appear on sub-channels within TXPlay. When scheduling secondary events using Start+ time mode in this fashion, the start offsets would not be obeyed.

  Secondary event relative start offsets are now obeyed for items scheduled using the "AUXCH" option.

- **ITX-11549: Start time of BXF4 schedules were incorrect**

  BXF4 SPS no longer adds the UTC offset of PC clock to UtcDateTime values, so the start times are now correct.

- **ITX-11544: iTX RTMP output frame rates were not reported correctly when analysed by ffprobe**

  Decorative RTMP metadata has been added to the GV Engine RTMP output so that frame rates are now

reported correctly when analysed by ffprobe.

- **ITX-11543: Restarting Delivery Manager during a FlashNet job caused continuous restarts of the Delivery Manager service**

  When a FlashNet Archive or Restore job is in progress and the Delivery Manager service is restarted, the Delivery Manager service no longer continuously restarts while the job is active.

- **ITX-11534: Co-referenced media was cached separately if scheduled before it was delivered**

  When co-referenced (daughter clips) are scheduled before the parent asset is cached, each of the co-referenced clips now caches using the parent cache Source location, instead of its own Source location.

- **ITX-11532: Flash frames of live inputs crossed between channels on a dual channel iTX Output Server**

  In an SDI system with two channels running on the same server with an AJA 88 card providing live inputs for both channels, flash frames from one card could appear on the output of the other channel if it was playing a live event while a live event was cueing on the first channel. After addressing the issue, no flash frames are seen in this situation.

- **ITX-11531: UMP plugin interpreted inbound "out_of_network_indicator = False" messages as Start splice requests**

  Inbound SCTE 30 splice request messages with "out_of_network_indicator = False" were interpreted as "Start Normal" or "Start Immediate" splice insert type. This has now been fixed, so that they are interpreted as "End Normal" or "End Immediate" as expected.

- **ITX-11506: Ingested audio tracks were not mapped correctly**

  Upon ingest, the first pair of audio tracks are now correctly mapped and are no longer duplicated across all remaining pairs of audio.

- **ITX-11471: The UMP Output Server Plugin would not apply the correct break_duration information to second and subsequent items in SCTE 35 splice_insert bursts**

  When SCTE 35 splice_insert bursts are received by the UMP output server plugin in pass-through mode, the correct break_duration information was only applied to the first message in the burst.

  The correct duration is now applied to all messages in the burst (as defined by the messages having the same value present in the splice_event_id field).

- **ITX-11457: Voiceover events produce an error when a second audio channel plays a voiceover with silence**

  Voiceover events no longer produce an error when the channel is configured to have a second audio channel playing voiceover with silence.

- **ITX-11421: GPI mapping information was lost when loading a schedule in an Edit channel.**

  The Colossus Plugin in TxPlay2 provides generic mapping of GPI events to channel-specific GPI configuration.

If a schedule containing generically mapped GPI events was loaded in an EDIT channel, the mapping information would be lost if the item was saved. The information is now retained.

- **ITX-11388: Triggering a Vizrt event caused the duration of Vizrt graphic events to be inaccurate by more than a single frame**

  The commands controlling the Vizrt device are now sent in such a way as to make sure the commands are sent within a frame of the expected time.

- **ITX-11383: The status of items in the schedule were incorrectly changed to 'Done'**

  A comment in the past that was positioned at the start of a schedule no longer causes all subsequent events to be shifted up in the schedule and their status to become 'Done'.

- **ITX-11343: When the GPI-1501 card lost its connection, the GPI service had to be restarted to reconnect**

  The GPI Service now checks the GPI card for availability and reconnects if the card is available.

- **ITX-10939: When the GPI Service was stopped, GPI events stayed in the 'on-air' state until the schedule was cleared**

  Current and scheduled GPI events will now fail if the connection to the GPI Service is stopped during a GPI event and while the service is unavailable.

- **ITX-10670: The iTX Desktop's Color Configuration setting for 'Time Mode Value Start/End Minus/Plus' was not applied**

  Color Configuration settings for secondary events with Start Plus, Start Minus, End Plus or End Minus time modes are now applied correctly. Redundant information in the Color Configuration pop- up is automatically removed when the configuration changes are saved.

- **ITX-10497: Audio mapping and recording controls would not open across multi-domain views**

  The Audio Mapping and Recording windows now open if the same channel is accessed using an iTX Desktop in a different Domain and either the Audio Mapping or Recording icons are selected for the primary item on the Schedule Grid.

- **ITX-9690: Color Configuration for events based on asset 'Content Type' information was not supported for all asset types**

  User-defined Color Configuration options matching 'Content Type' of assets would only affect video Clip assets scheduled in a channel.

  This now affects all asset-based events for which 'Content Type' is appropriate. Fully supported types include video Clip, Audio, CG, Graphic, Live Event, Subtitle and Logo.

Version v2.12 SP4 (build 3.212.4.631)

New Features

- **ITX-11482: The Retain User Data setting applies to Find & Replace operations**

  When the Global Edit: Retain User Data setting is disabled in the iTX Desktop and an item in a BXF schedule is replaced with another using the Schedule Grid's Find & Replace operation, the BXF metadata for the BXF metadata for the original asset will not be retained by the new asset. If the Retain User Data setting is selected, then the Billing Reference and other metadata is passed to the new asset when a Find & Replace is performed.

- **ITX-11314: Audio tracks are grouped irrespective of their position in source**

  Audio tracks are now grouped based on language tags, irrespective of their position in source media file. In circumstances where the Right track is found before the Left track, they are re-ordered so that Left & Right channels are played in correct order.

- **ITX-11267: Completed the full implementation of Dual-site channel control**

  Dual-site channel control provides channel redundancy across domains (e.g. channel1 in domain A and channel1-backup in domain B) and the ability to operate the channel(s) from either domain. Please refer to the "Dual-Site Channel Control Configuration Guide" for more information.

- **ITX-10380: Live Events support GPIO configuration regardless of schedule contents**

  The Remote Studio Control option has been added to the Edit GPI dialog, which is invoked from the Live Event Plugin Configuration. Enabling the Remote Studio Control button invokes GPIO functionality when the Live Event is followed in the playlist by a Sequence event that is scheduled with Time Mode set to Manual and the External Takes Allowed option is enabled. Disabling the Remote Studio Control button invokes GPIO functionality regardless of the type or scheduling of the next item in the playlist.

- **ITX-9423: Enhancements to the support of SCTE 104 messages in iTX**

  The Timestamp tab was added to the iTX Desktop's Content Selector and Event Editor for Enhanced SCTE 104. The Timestamp setting on this tab allows you to control the SCTE 104 Multi

  Operation Message’s Timestamp structure. For more information, see the "Set up and insert an enhanced SCTE104 message" section in the iTX Desktop Operator Guide.

  Also, the ITXML schedule format now supports variable length segmentation_upid data to be written to SCTE messages, which can then be sent to the Output Server using an Enhanced SCTE 104 event.

Fixes

- **ITX-13120: Subtitles were out of sync with video/audio or sometimes not displayed**

  Open subtitle were being cached/queued up across event boundaries and output during the following event. To fix this problem, open subtitles are discarded at the end of an event boundary.

- **ITX-12239: The status of a DVE template was Ready instead of Cued, which caused a Take delay**

  Upon enabling and presetting an Output Server to use a DVE template, the DVE is now correctly cued for all channels and no delay is experience when the DVE is taken to air.

- **ITX-11496: The first connected iTX HCO instance produced a bad data error upon enabling thumbnails within the Densité Frame**

  RAW data messages contain thumbnails which are not appropriate for HCO Services. In the past, these RAW messages were potentially sent to the service if thumbnails were enabled on the HCO Card. This caused issues in message processing and has potential impact to the status messages between the card and the service. To remedy this, The HCO Router service now requests that RAW data messages are not sent to the HCO Router Service.

- **ITX-11487: iTX Delivery Manager's Flashnet Endpoint did not function correctly**

  The logging of any messages within the Delivery Manager Flashnet Endpoint was causing exceptions. This meant that the endpoint could not archive, restore or check for media.

  The logging functionality has been restored. The endpoint now functions as expected.

- **ITX-11478: Master Control Secondary item held in Post Schedule Restore**

  Following a Schedule Restore, an iTX-MC Secondary item was held in Post Schedule restore for the Backup channel and Main channel. As a result, the Secondary Item was not removed from playout on the Program channel. This issue has been fixed.

- **ITX-11477: Demoted Channel Controller did not automatically become promoted after a manual failover**

  When manually failing over the Follower channel to become Leader channel after deliberately shutting down the Leader, the demoted Channel Controller service associated with the Follower would not automatically become promoted. This would prevent an operator from controlling the newly promoted channel. The demoted Channel Controller service is now promoted, allowing control of the channel.

- **ITX-11455: Second TSNetwork2 entry not stored correctly**

  When a second TSNetwork2 input is added using the Configurator, the IP address for both TSNetwork2 inputs is no longer set to the same value.

- **ITX-11451: The Live Fill & Key button in the Channel Controller displays the incorrect status of duration items**

  The Live Fill & Key button in Channel Controller now accurately reflects the status of live Fill & Key components and the scheduling of On and Off Fill & Key items. Duration items are not tracked.

- **ITX-11445: Chained schedules were corrupted by comment events**

  Comment and fixed events no longer cause a corrupt schedule when there are chained schedules.

- **ITX-11440: The NOW display in the iTX Desktop showed the name of the nested schedule rather than the item currently on-air**

  When a schedule is nested within another schedule or has been dragged in from the Content Selector and the first item in the schedule is a comment, the NOW display above the Schedule Grid will show the name of the item currently on-air instead of the nested schedule's name.

- **ITX-11434: TXPlay schedules were out of sync with the Network schedule**

  TXPlay schedules were out of sync with Network schedule because the demoted Channel Controller was sending messages to the TXPlays. To prevent this from occurring, the message queue is now halted for the demoted Channel Controller service.

- **ITX-11431: Comment Events were visible despite Hide History mode being enabled and the Local Start Time was incorrect**

  Comment events now report local start time and are not displayed when Hide History mode is enabled.

- **ITX-11402: Failover before a clip is cued caused a "Could Not Get Audio Program Group List" error**

  An HCO failover before a clip is cued no longer causes a "Could Not Get Audio Program Group List" error.

- **ITX-11391: Cached assets from an appended schedule were reported as "Not Ready" in the Schedule and failed to play**

  Assets are now shown as cached on the Media Cache when a schedule has been appended and gone through the Media Cache process.

- **ITX-11371: Items failed to go "Ready" in the Edit channels**

  An internal fix has improved the Output Server's ability to check the state of the media.

- **ITX-11370: Changes to schedule assets failed to update on-air playlists in TXPlay2**

  When an update to an on-air schedule was made, the expected changes would not be carried out if the schedule was on-air in a channel's playlist. The on-air schedule is now updated as expected.

- **ITX-11369: A schedule with a fixed start time and a leading Comment event caused a gap before the next schedule**

  Event start times are now calculated correctly when a schedule has a fixed start time and a leading Comment event.

- **ITX-10953: Some Logo file formats are now correctly imported by Delivery Manager**

  When using Delivery Manager to import Logos, details of the graphics such as size and thumbnails were not correctly recorded in the Logo asset.

Delivery Manager now correctly imports the following Logo file types:

.TZIP

.BMP

.JPG

.JPEG

.PNG

.SPG

- **ITX-10511: Combining text properties, such as bold and italic, in CGs rendered the text incorrectly**

  Text properties have been corrected so that any combinations of bold, italic, underline and strikethrough now render correctly.

- **ITX-10048: Billing Reference was missing from the BXF As Run logs after a schedule restore**

  Billing Reference is now maintained in BXF As Run logs after a schedule restore has taken place in the Schedule Grid.

- **ITX-9796: The UTC time offset was not applied in the Ingest Control Service**

  The UTC offset is now applied on Ingest Control Service when the offset has been set in the iTX Desktop's Channel Config 2 tab.

- **ITX-8073: Schedule that was incorrectly formatted was sent to processed folder instead of the Failed folder**

  When a BXF file contains correct details (i.e. the House number included), then the BXF file is correctly displayed in the Processed and Response folder. If however, the BXF file contains incorrect details (i.e. missing the House number), then the BXF file displays an error in the Failed and Response Folder.

Version v2.12 SP3 (build 3.212.3.586)

New Features

- **ITX-11096: iTX Site Replication now supports the replication of CGs, Logos, Graphics and Audio (Voiceovers)**

  iTX Site Replication now supports the replication of the following asset types: Schedules, Video, Graphics, CGs, Logos, Audio (voiceovers) and Subtitles.

  The following items that are associated with the above asset types are also replicated for all of the above asset types: Asset Notes and Asset Categories.

  For Subtitles, the links between Subtitles and associated video clips are also replicated.

- **ITX-10920: Improved handling of incoming connections using the Smart III protocol**

  The latest version of Live Subtitle Gateway includes improved handling of connections coming in using the Smart III protocol.

- **ITX-10897: Teletext Configuration setting allows opt-out x31 cue packets to be encoded into selected VBI lines**

  In the Output Server 2's Teletext Configration window, selecting the x31 Cues > Enable setting allows opt-out x31 cue packets to be encoded into the selected VBI lines. The VBI lines will contain valid opt-out data when a VANC secondary event is scheduled and includes a X31CUES type. The following values are used in the x31 packet:

  Channel: B

  Address: D7

  Data: Softel D1 Inserter

  Encryption: Off

- **ITX-10740: Override canvas size used for External DVB video PID subtitles**

  Now able to override the canvas size used by the External DVB renderers to determine the size of bitmaps inserted in to the subtitle PID for External DVB and External SCTE 27. This allows the insertion of SD bitmaps into the Transport stream even when the iTX player is configured for HD. If the subtitle PID is marked as SD it leaves the Set top box to decide if it should upscale the bitmap based on the Video PID associated with the subtitle PID .

- **ITX-9904: iTX Site Replication now supports two-way asset replication**

  iTX Site Replication can now replicate assets from one iTX domain (Site A) to another (Site B) and vice-versa (Site B to Site A). The two-way replication configuration can use either local media stores or a shared media store.

  Two-way site replication requires that both of the iTX domains have an instance of the Site Replication Service installed and they must be configured to use a shared GV Platform.

- **ITX-7843: Air Date from Masstech Store is now visible in Asset view**

  The Air Date as listed in the Default Group of asset details in the Masstech asset store is now imported to the ITX Asset view as the Production Date.

Fixes

- **ITX-11370: Changes to schedule assets failed to update on-air playlists in TXPlay2**

  When an update to an on-air schedule was made, the expected changes would not be carried out if the schedule was on-air in a channel's playlist.

  The on-air schedule is now updated as expected.

- **ITX-11117: Media Cache service showed the size on disk of a reference mov file as being only the essence file size**

  The Media Cache Service now displays the full size of the ingested media for reference mov files.

- **ITX-11069: iTX Desktop's Audio Override controls not working when a secondary event is associated with the on air clip**

  The Audio Override's volume slider and lip sync adjustments are now applied in situations where a secondary event is associated with the on air clip.

- **ITX-11064: Control buttons were duplicated on the Subtitle Closed Configuration dialog in Output Server 2**

  The Subtitle Closed Configuration dialog for the closed services no longer displays duplicated Reset, OK and Cancel buttons.

- **ITX-11062: Channel Alias field was not populated in Missing Material View**

  In the Missing Material View of the Channel Control layout, the Channel Alias is now be populated when Channel Alias is set in Channel Config and the Missing Material Manager setting is set for Channel Selection.

- **ITX-11053: Layer 0 would always be used for a Logo item in a BXF schedule import**

  The specified layer is now used for a Logo item in a BXF schedule import.

- **ITX-11012: The Subtitle file converter was not able to correctly convert the boxing type inside a PAC file type when importing for use on an Open output**

  The Subtitle file converter was placing all the subtitles on the bottom rows when converting a Closed STL file for use on an Open output. The XIF file saved by the File converter now uses a vertical position matching the teletext row position in the original STL file, which results in saving the boxing type to match the one in the original PAC file.

- **ITX-10955: Captions did not play on some channels after services on the Output server 2 were restarted**

The Subtitle tab in the Output Server 2 Configuration window was missing after services were shutdown or restarted on the Output Server 2. This resulted in the Subtitles configuration not being accessible for playout. The Subtitle tab now persists after restarts and shutdowns of services.

- **ITX-10941: Setting Manual start mode on an item using BXF schedules forces Allow External Takes to be set for the item**

  The start mode setting "External" should set the Manual start mode and enable "Allow External Takes" for the item. Start mode "Manual" should set the Manual start mode and disable "Allow External Takes" for the item. Start mode "Manual" was incorrectly setting "Allow External Takes".

  To prevent affecting existing schedule imports, a configuration option has been added to allow "Allow External Takes" in any form of BXF schedule import to iTX to be enabled or disabled for items with "Manual" start mode. This behaviour can now be configured to behave as was originally intended.

  The flag has been added in such a way that it can be set for any required application. This will normally be the Schedule Processing Service. The setting is:

  <add key="BXFStartModeManualAllowExternalTake" value="True"/>

  If set to True, then "Allow external takes" in iTX is enabled for Manual start mode items. This is the default setting and maps to existing behaviour.

  If set to False, then "Allow external takes" in iTX is disabled for Manual start mode items.

  The setting has been added to the "WorkflowApplicationService.exe.config" to affect the Schedule Processing Service. It can be added to the appropriate applications' ".exe.config" file or the machine-wide "Omnibus.config" file to affect other applications.

- **ITX-10933: Simulcast & Backup (follower) channels no longer in sync after a schedule update when the first item was a fixed item**

  All channels will now be in sync after a schedule update independently of the first item time mode.

- **ITX-10925: Media checks for Vertigo XG events would time out when using Dual Channel iTXG**

  TXPlay was excessively media checking missing Vertigo XG content. This was particularly noticable if an XG item was in a schedule numerous times, which would not only generate a media check for the missing item, but also for each instance of the missing item.

  In addition, missing media 'NotReady' messages and the associated warning displayed in the Schedule Grid for multiple instances of a single missing asset would often take some time for every item to be displayed in the grid as missing. This now happens almost instantaneously for every instance, as does the removal of the yellow NotReady status and warnings should the item become available again.

- **ITX-10902: Delivery Manager was unable to connect to a Masstech endpoint**

  Delivery Manager is once again able to connect to the Masstech endpoint.

- **ITX-10901: Enabling or disabling any of the As Run Service Config options created an additional ITXML plugin instance**

  Enabling or disabling any of the options for the As Run Service Config no longer creates additional instances of the ITXML plugin. As a result, the ITXML Log Day folder no longer rolls over by multiple days after the configuration has been altered.

- **ITX-10689: Embedded 708 always regenerated**

  Added the Regenerate 708 setting to differentiate between wanting to regenerate 708 from the 608 files played out by iTX and the need to regenerate 708 from the incoming embedded 608.

- **ITX-10688: Auto Cue After Live Event functionality fails for back-to-back lives events**

  Auto Cue After Live Event functionality in TXPlay2 now works correctly for the case of back-to-back Live events.

- **ITX-10638: Join In Progress (JIP) functionality could trigger items to skip incorrectly if extra material is added to the playlist before JIP is triggered**

  If extra material was added to the playlist (e.g. an extra live segment and break), then the channel would overrun without any specific live event entering overrun. When this happened, the Join In Progress (JIP) item would incorrectly roll at its scheduled time, skipping the end of the live event and the end credits for the live production and an end break.

  To resolve this issue, a configuration option has been added for TXPlay2 that allows internal JIP logic to be applied at an earlier point in time so that the expected JIP rollunder behavior happens in this scenario.

  The flag can be found in the usual TXPlay2 Channel Configuration "Channel Config 2". Enabling the "Mark JIP Flag Before HOLD" option triggers the new behavior.

- **ITX-10596: SNMP alerts forwarding from the System Service fails after six minutes**

  The forwarding of iTX alerts over SNMP would fail after a time period of six minutes. This has been addressed and the functionality will continue to work indefinitely.

- **ITX-10555: Start+ Secondary events on Live events were recued as the Live event went to air**

  Secondary events scheduled as Start+ events and starting within seconds after the Live event were recued and caused duplicate messages to be sent to UMP playout devices. Changes have been made to ensure the secondary events only cue once to avoid the duplicate messages.

- **ITX-10505: Master Control events ignore the configured Fix time and playout the entire video clip**

  When a fixed Master Control event was scheduled to cut into the end of a preceding video clip, the Master Control event ignored the configured Fix time and the video clip would playout in its entirety, thus rendering the Master Control event into an Auto event item. Now, the Master Control event play outs at the configured fixed time and will not be set to auto mode.

- **ITX-10502: The Subtitle File Translator does not install all of the required runtime DLLs**

  When installing the Subtitle File Translator with Delivery Manager, all required DLLs are now installed such that the application will start correctly on a greenfield machine.

- **ITX-10197: Unable to delete the partial clips produced by the CacheShotlist Workflow after the Export Shotlist workflow has copied them from the iTX Mediastore to an external destination**

  A new option "RemovePartials" has been added to the Export Shotlist workflow. Partial clips generated by the workflow are now deleted at the end of the workflow when "RemovePartials" is set to True and not deleted if it is set to False.

- **ITX-10160: Vertigo XG out transition exceeds iTX cleardown timeout**

  The iTX cleardown timeout for Vertigo XG events has been increased from five seconds to ten seconds to allow animations with longer out transition duration to complete before being marked as failed. Note that the duration logged to the As Run file is still the iTX event duration.There is now a limit of ten seconds for the outgoing animation of a Vertigo XG template being controlled by iTX.

- **ITX-10115: Skipping a fixed item caused the next item to not respond to ripples of Auto time**

  When a fixed item is skipped in TXPlay2, the following item with Auto time mode now obeys its Auto time mode. TXPlay functionality has not been changed.

- **ITX-10060: Deleting a sequence resulted in an error causing another sequence to fail**

  Deleting a sequence no longer negatively impacts subsequent sequences.

- **ITX-9882: First frame of a clip after a Master Control primary event is only cued when it is within 13 seconds of the next event**

  Now the first frame of clip after a Master Control primary event is cued immediately when the Master Control primary event goes to on-air.

- **ITX-9777: GV Engine secondary record does not match media location due to special character discrepancy**

  iTX video assets with names containing illegal characters (such as forward slash and backslash) created during the OS2/GV Engine secondary record process now have those characters correctly handled or escaped to an underscore (as applicable) in the filename of the asset.

- **ITX-9446: The 'Edit Page Text' button is not displayed in the Event Editor for VizRT items**

  For some resolutions of the iTX Desktop's Channel Control layout, the 'Edit Page Text' button was only partially displayed in the Event Editor for VizRT items. This has been addressed and the button is now fully displayed.

- **ITX-8985: Inventory Service periodically issues removals and additions of assets** The Inventory Service was removing and adding assets for the monitored Masstech Archive. This resulted in missing externally available Masstech assets from the connected iTX system. The restarting of the Framework Server's System Service was creating additional active Inventory Service Working Threads which conflicted with each other, causing the problematic behavior. This problem has now been fixed.

- **ITX-8983: IS750 crosspoints were not switched correctly if a master control event had cued ready to play and a video clip was inserted before it**

  The TXPlay Master Control driver would not return the IS750 to the iTX crosspoint correctly under the following conditions:

  A Master Control primary event was on air and a second Master Control primary event was cued and ready for air with its crosspoint displayed on the PST bus. If at this point an operator inserted an iTX video clip event, the video clip would air correctly but the IS750 PGM bus would not be returned to the iTX crosspoint

at the on-air point. The TXPlay Master Control driver would instead take the previously-cued crosspoint for the second Master Control event to air.

The TXPlay Master Control driver now takes the iTX crosspoint to air correctly.

- **ITX-8886: BXF Asrun file has all previously skipped items from channel history duplicated after each schedule restore**

  Duplicate entries could be created for skipped events (including all comment events).

  If a channel was configured with history, or if expanded schedule markers lead to historic items being held in the channel, then any operation involving a schedule restore would result in the historic skipped items being duplicated. This would happen after each schedule restore.This work prevents the duplicates from being generated.

- **ITX-8857: Creating a Manual insert by selecting another source on iMC Panel causes schedule items to be skipped**

  Upon selecting a Manual Insert from the iMC-Panel, all items for the Schedule, including the 'OnAir' secondary Master Control Event ('news'), no longer go to 'Skipped'.

- **ITX-8810: Restarting TXPlay fails to trigger Manual Insert events**

  If TXPlay or TXPlay2 is stopped and then restarted over a junction between video clip event and Master Control primary event, a manual insert event is correctly created if the IS750 is determined to be on a crosspoint that is not consistent with the transition between the video clip event and Master Control primary event. This also applies for restarting TXPlay or TXPlay2 over a junction between a Master Control primary event and a video clip event.

- **ITX-6074: Inventory Service cannot retrieve asset inventory following a Masstech Restart**

  When the Masstech host PC was restarted, the Inventory Service could not retrieve the inventory, which required a restart of Delivery Manager. This is action is no longer necessary to retrieve the assets.

- **ITX-5797: Unable to search by Purge Date in Smart Client**

  You are now able to perform a search in Smart Client by filtering on the Purge Date.

Version v2.12 SP2 (build 3.212.2.478)

New Features

- **ITX-10675: Added the Media Duration field to the Quick Duration Modifier**

  The Quick Duration Modifier appears when the Duration value is clicked in the iTX Desktop's Schedule grid for an item type that supports media limits. The Media Duration field has been added to the Quick Duration Modifier and allows you to configure the physical media duration directly rather than manipulating the in and out-point of the media. Setting the Media Duration field automatically adjusts the out-point of the media and enables the Hold Points flag.

  Additionally, the Quick Duration Modifier has been disabled for the following types of events that do not support a duration value:

  comment

  subtitle

  schedule

  sequence

- **ITX-10358: The GV Platform API key can now be configured**

  The GV Platform API key can now be configured in the Database Config tool which is shown during a greenfield installation. The API key will be used by iTX services on the domain.

- **ITX-10318: Site Replication Service configuration to replicate schedules**

  The configuration to replicate schedules can now be set in the Site Replication Service within the Configuration tab. Fields that need to be set are GV Platform URL, GV Platform API Key and the iTX Domain Name. There is also a check box to enable 'Replicate Schedules.' The details of the configuration are saved to the Object Data Service.

- **ITX-9905: Schedule Replication**

  There is now a new service called the Site Replication Service which can replicate Schedules between two sites using the GV platform notification service.

  Upon configuring the Site Replication Service for Schedule replication on Site B, all schedules that are created, modified and/or deleted on Site A, site will be automatically replicated on Site B.

  Note that live channel schedule backups and/or asrun schedules WILL NOT be replicated by this service.

- **ITX-9341: Added dual Fill & Key support**

  A new Fill & Key configuration is available for the Corvid 88 AJA card. With the new configuration, two separate Fill & Key inputs can be overlayed onto a video simultaneously.

Fixes

- **ITX-10602: The Preview window in the iTX Desktop's Event Editor was not displaying the video clip selected from the schedule grid**

  When the Preview window in the iTX Desktop's Event Editor is set to Auto (defaulting to GV Engine mode) or GV Engine mode, the preview window is no longer obscured and the video clip can be viewed.

- **ITX-10507: UMP Media Cache Service has duplicate Cache List entries due to the loss of the network to the symbolic link share**

  The Media Cache Service now tracks entries correctly when using a redirected shared folder via a symbolic link. If this link is lost (i.e. network error or reboot the UMP), duplicate entries are no longer generated in the Cache List.

- **ITX-10457: As Runs files are missing items after updating and saving**

  After updating the As Run file, the save operation fails due to the file being locked. A retry has been added on write failure (10 attempts with 500ms wait between each one). If the retry fails completely, the failed records are cached and added to the front of the items to be written the next time (the cache is cleared after a successful write). A synchronization lock has been added as multiple calls into the writer (which can happen more frequently due to the retry delay) can result in data loss -- this is because the existing file is read, new items added in-memory then then file updated; This means that a second instance can read the file in-between the first read and the first write, effectively losing the new items (i.e. it is a typical ABA problem).

- **ITX-10448: Changing one of the Media Limits settings for Placeholder clip changed the other corresponding limit**

  When the media limits value of a placeholder clip is changed (e.g. in-point increased or out-point-decreased), the new value is no longer added to the opposite hold point. Placeholder clip points now obey the correct values.

- **ITX-10204: Time Source - Time from VITC was using the Local PC Date**

  When the Time Source was set from the VITC card and it was different from the local PC time, if the Local PC Time was offset to take the source time over midnight to the next day and the Time Service then restarted, then the time of day for the VITC would remain the same, but the date would jump to that of the Local PC Time. All scheduled items would then go into the past. This issue has now been fixed.

- **ITX-10182: The Job service's FPP Render Plugin was not using Channel Audio Configuration**

  Rendered assets would always contain a single mono track of DolbyD followed by 4 tracks of PCM stereo (logical) regardless of the asset's audio type or audio config of the template channel. Now the rendered assets contain the 4 tracks of PCM audio specified by the 2 profiles (SD and HD) always used by the render process.

- **ITX-10117: The HCO service intermittently stops when receiving Send Partial - Send Partial Process commands**

The HCO service no longer goes into a 'Timed out waiting for response' state when receiving Send Partial - Send Partial Process commands.

- **ITX-10114: Secondary video's audio is out-of-sync in PIP events when using Vertigo XG Inside with Output Server 1**

  When two clips are scheduled as a primary and secondary video event using an XG picture-in-picture template, the audio of the secondary item no longer lags behind its parent video by around 5 or 6 frames.

- **ITX-10083: On/Off logos relationship is now working**

  A warning is now displayed if a scheduled On logo is scheduled without a corresponding Off logo . Similarly, if a schedule Off logo is scheduled without a corresponding On logo, then a warning is displayed.

- **ITX-10059: Offset Channels go into hold at the offset time after a manually take is performed**

  If a manual take in the main channel, the offset (delay) channel goes to hold at the correspondent offset time instead of taking the manual take item to air.

  Now the manual item is considered a fixed item in the offset channel and the manual flag is not set.

- **ITX-10038: Unable to configure the iTX Desktop's Timeline tracks using the Configure Tracks button**

  The tracks in the iTX Desktop's Timeline can once again be configured using the Configure Tracks button on the Channel Config 1 tab (Engineering layout > Channel Config).

- **ITX-9826: Locator service could stop sending its locally registered locations to other load-balance-partnered locator services**

  The Locator service no longer stops sending its local registered locations to its load-balance-partnered Locator services and the correct information is again used when applications try to connect or re-connect to other services.

- **ITX-9710: TXPlay delayed the handling of a cued message, which resulted in a delay in the Take Next to air**

  When the 'TAKE NEXT' button is pressed, schedule items no longer stay in a 'Cueing' state for 10 seconds. As such, the playout is also no longer delayed for the same period of time.

- **ITX-9422: Missing Materials Manager may purge items that are scheduled in the future if a channel that it is monitoring is in Hold**

  Extra logic has been built into Missing Materials Manager so that it can detect when a channel is on Hold and will not therefore delete any assets that relate to events that are in the future.

- **ITX-9391: Duration Logo events, On Logo events, Live Logo support and Flash events were not providing accurate start time and duration values to UMP devices**

  UMP_Insert_Graphic_data and UMP_Insert_Template_data commands did not accurately reflect scheduled start times and duration in all situations. Changes have been made to ensure timings are accurate including adjustments made when items are restored to air. These changes affect Duration Logo events, ON Logo

events, Live Logo support and Flash events.

- **ITX-9047: Asset Export workflow fails to export the proxy version of the clip**

  When using the Asset Export workflow to export an asset, there was an issue where selecting the option to add any existing proxy video to the export would fail to export the associated file. A change has been made to the workflow definition file to allow the proxy video file to be exported successfully.

- **ITX-8917: Output Server 2 Secondary record using time of day timecode**

  A timecode override can now be configured for secondary records in Output Server 2. This is configured in the Secondary Record section of the Channel Config 4 tab of the Channel Config. The timecode override is done on a pre-channel basis with different channels in the same iTX system being able to use different timecode styles for their start-of-media. The default setting for secondary records is to use time of day but this can also be set to use either a fixed start time (e.g. 10:00:00:00) or zero start time (00:00:00:00).

- **ITX-8233: Missing Materials Manager is often in an incorrect warning state**

  Missing Materials Manager was often in a state of warning due to schedules being referenced in the past. So now Missing Materials Manager only considers current and future schedules when raising warnings.

- **ITX-7724: Changing the duration value in the Duration Quick Modifier dialog toggles the Hold Points flag**

  When changing the duration of an item in the schedule using the Duration Quick Modifier, the Hold Points flag are no longer enabled.

Version v2.12 SP1 (build 3.212.1.426)

New Features

- **ITX-10099: Changes to the Output Server 2's Subtitles Configuration page and Teletext Transmission Mode settings**

  The SDI tab in the Output Server 2's Configuration > Subtitles page has been renamed to WST/Open.

  As well, the Transmit setting in the Mode and Priority section of the Teletext Output Configuration (WST/Open tab) has been updated and now includes support for OP42. The previous options (OP47, OP47Split, SMPTE2031, SMPTE2031Split) have been updated to OP-47 Split, OP-47 (OP-42) Split and SMPTE-2031 Split.

- **ITX-10003: Teletext subtitles can be configured for IP only systems**

  It is now possible to configure Output Server 2 to allow closed Teletext/608 and open burnt-in subtitles to be added to the IP 2022-2 output without the need for a Corvid SDI card to be present. This is necessary for IP only systems.

Fixes

- **ITX-10282: Live Events fail when added to a TXPlay2 playlist**

  When a Live event is now added to a TxPlay2 playlist, the item will no longer fail.

- **ITX-10254: iTX Encoder Config displays an ambiguous error message if the incorrect AJA drivers are installed**

  An error message stating "Sequence contains no elements" was displayed when the iTX Encoder Config tool was opened and the incorrect AJA drivers are installed. This ambiguous error message has been replaced with a more relevant message, which is displayed under the following conditions:

  GV Engine is not installed

  The AJA drivers are not installed

  The Device Controller configuration files are not installed

- **ITX-10243: Subtitle Import in Delivery Manager fails to convert Tamil SRT files**

  iTX Delivery Manager's subtitle import process now correctly converts the characters in Tamil SRT files.

- **ITX-10129: TxPlay2 creates duplicate As Run entries when disconnected from the iTX Framework services**

  Disconnecting and reconnecting or stopping and restarting the OPUS service no longer produces the duplicate As Run items that were causing out of memory exceptions and crashes.

- **ITX-10107: Subtitle import in Delivery Manager fails to import SCC file**

  iTX Delivery Manager's subtitle import process now correctly imports SCC files with certain EIA-608 packet

sequences without producing an error message.

- **ITX-10025: Media Cache purges the wrong video file**

  When a 'Not Ready' clip appears in the Schedule Grid and the Output Server 2 channel's Cache is purged, if the same clip is immediately re-ingested into Delivery Manager, the newly ingested video file is no longer deleted. As expected, the clip's Cache Status will be Ready (green) and you will be able to Cue and Take the clip.

- **ITX-9925: BXF router events went into error status when scheduled**

  The BXF samples had Destination and Source the wrong way round - the samples have been updated to match the BXF documentation.

- **ITX-9878: A schedule store/restore causes the backup channel to get the live source from the store/restore**

  Now when the primary output server goes from a Network live source to a news live source back-to-back, the backup makes the correct route.

- **ITX-9784: The iTX Desktop's Asset layout freezes if you fast forward the preview to the end of a live recording**

  The Asset layout no longer freezes when the Fast Forward option in the Asset Player (in Media Processing mode) is used until the end of an asset that is still being ingested.

- **ITX-9471: Saving a copy of a Live asset does not inherit Audio Tracks settings**

  When creating a copy of a Live asset, copy the Logical Audio Tracks from the existing asset to the new asset.

  When creating a co-reference of a Video asset, copy the Applied Audio Rules from the parent asset to the daughter asset.

- **ITX-9225: Video clips whose duration goes beyond midnight are missing from ITXML As Run output**

  Video clips, with or without secondary items, that span midnight are now written to the ITXML As Run Log file.

- **ITX-9012: VizRT events without text fields were failing in VizRT Trio**

  Any type of VizRT event can now be scheduled without resulting in a failure.

- **ITX-8814: Media Delete Jobs for FTP endpoints set to not allow deletes are no longer create**

  A Media Delete job was being raised and set to complete even if the Delivery Manager endpoint was configured to not allow deletes. Now the Media Delete job is no longer created if the Delivery Manager Endpoint is configured to not allow deletes.

  It is also no longer possible to disable a Media Delete job using the OPUS Service Job Type tab inside the Management window. To disable this type of job, you must now use the "Allow Deletes" configuration in the Delivery Manager Endpoint configuration. Attempting to enable or disable this type of job in the OPUS

Service management window results in a message advising you to use Delivery Manager endpoint configuration.

- **ITX-8296: VizRT command timeout caused all clips in all channels to cue later than expected**

  A VizRT command timeout no longer affects the rest of the clips in the channel.

- **ITX-7442: GSM Gateway logs are flooding the iTX system logs**

  iTX GSM Gateway is no longer writing an inventory of verbose log entries to the system logs.

- **ITX-6798: As Run Start allows the entry of partial hours, but then saves as full hours**

  The As Run Start field has been changed to accept only integers so that you can only enter full hours.

- **ITX-5401: Missing Materials combined reports are now valid against their XSD schemas**

  The cause of this issue was that an incorrect XML namespace was provided in the Combined missing materials report type. This meant that the report did not contain validatable XML. This fault was introduced in iTX 2.6 and has now been corrected in 2.10 SP5 and 2.12 SP1.

  For the InterchangeFormat report format type, resolution of this issue required that the XML namespace 'xsi:schemaLocation="http://www.omnibus.tv/MissingMaterialAsset.xsd"' be corrected to 'xsi:noNamespaceSchemaLocation="MissingMaterialAssets.xsd"'. The XML is now valid against that schema, which is supplied with the iTX APIs. We have not changed the content of the report other than the namespace specified.

  For the LegacyFormat report format type, resolution of this issue required that the parent node of the xml provided be restored from "t_clip_missing" to "t_clip_missing_list". The XML is now correct according to the schema "http://www.omnibus.tv/omnibus.g3.sig/omnibus.g3.sig.clip.xsd", which is supplied with the iTX APIs.

  This could affect the parsing of combined Missing Materials reports. Sites where the combined missing materials reports are used should carry out a review to ensure any third parties consuming the data can successfully parse the corrected XML reports.

  This could affect transforms used to generate the reports. If customers have a transform configured in Missing Materials Manager "Transform Filename..." then the transform may need to be reviewed to ensure it can successfully transform the corrected XML report.

  It is acceptable to use the Missing Materials Manager service from 2.10 SP4 or the original 2.12 release while any changes to update third party parsing or site-specific transforms are actioned.

Version v2.12 GA (build 3.212.0.378)

New Features

- **ITX-9739: External DVB and External SCTE-27 output options on the iTX Channel Config dialog and related licenses**

  The External DVB and External SCTE-27 output options have been added to the iTX Channel Config dialog (TXPlay2 Config). These options allow for output over IP TSNetwork2 packets containing DVB or SCTE-27 compliant packets to External iTX SubMux. The TS2OutputDvbBasePack and TS2OutputScte27BasePack licenses are required to support this new functionality.

  Similarly, a new 20222OutputDvbBasePack license has been added which allows output over 2022-2 packets containing DVB compliant packets.

  DVB Internal, External and SCTE-27 get two free open languages and are then controlled by adding the following language packs: ITX-TV-OPENLANG10 and ITX-TV-OPENLANG20.

- **ITX-9570: Rules can be applied during subtitle import to determine the output file type and the intent**

  Rules Based import allows for STL files to be transcoded to one or more open XIF files at import time using different transcoding profiles; these XIF files can then be played out on the DVB and SCTE-27 channels.

- **ITX-9556: Supported audio formats for audio clips and voice-over events**

  A voice-over may use an asset containing a WAV or MP3 location. In previous versions of iTX, the voice-over could reference a WMA, but this support has been removed.

  If you have any audio clip assets containing a WMA location, you must convert them to WAV or MP3. This can be done by reimporting the asset by dropping in a supported audio file. If the voiceover is already in a schedule, it will pick up the new location.

  Note: WMA-support has been removed from Media Watcher and Delivery Manager, but the physical location of the WMA file is not automatically removed when the location is deleted. You must manually remove the files as needed.

- **ITX-9123: Sub Channels are now supported for Output Server 2 channels**

  Sub Channels are now supported for Split Breaks and Opt-Out schedules. Using a configured Live asset, a sub channel plays out the primary channel’s output, including any additional content or processing that has been applied by downstream hardware devices.

  Note that sub channels must be reconfigured when moving from Output Server 1 to Output Server 2.

- **ITX-9122: Channel Network configuration is now performed in the iTX Desktop's Central Configuration layout**

  The Main/Backup and Simulcast settings have been moved from the Engineering layout's Channel Config 3 tab to the iTX Central Configuration layout in the iTX Desktop.

  The Configure Chanel Controller section of the iTX Central Configuration layout allows you to build the Channel Network, including adding backup, simulcast, regional or sub channels.

- **ITX-9090: The Network channel's On-Air indicator displays which primary channel is on air**

The color of the Network channel's On-Air indicator in the iTX Desktop's Channel Selector now provides a quick visual reference of which primary channel is On Air - main or backup. Hovering over the On-Air indicator displays a status overview of each channel within the channel network.

- **ITX-8877: New management restrictions when using multiple Preview As Channel controls in the iTX Desktop**

  The iTX Desktop has been updated so that only one Preview As Channel control can be in use at a time. If a clip is loaded into a Preview As Channel control and you attempt to load a clip in a second Preview As Channel, you will be prompted whether or not to continue. If you continue then the clip in the first Preview As Channel control is unloaded.

  Likewise, only one preview control (either standard or Preview As Channel) which is set to play out over SDI output can be in use at one time. If a clip is played out via SDI and you choose to load a clip in a second SDI enabled preview control, you are prompted to confirm whether or not to continue. If you choose to continue, the clip is unloaded from the first control.

- **ITX-8847: The iTX Desktop's "Clear All Logos and Captions" option also removes Fill & Key graphics**

  The functionality of the iTX Desktop's "Clear All Logos and Captions" option within Channel Health has been extended to allow operators to immediately remove all Fill & Key graphics from a video or live feed, as well as all logos and captions. This option is only available on a Network channel which has both Edit and Control rights activated.

- **ITX-8841: Fill & Key playout types added to the iTX Channel Config**

  Three new playout types have been added to the TXPlay2 configurations (iTX Channel Config), which allow you to configure Fill & Key inputs for Single, Dual Live and Simulcast channel playout.

  Single Channel + Fill & Key: Provides the standard single channel functionality, plus the ability to add graphics overlays to the output from a single pair of Fill & Key inputs. This playout type is available on servers equipped with either a Corvid 44 or Corvid 88 card.

  Dual Live + Fill & Key: Provides the standard Dual Live channel functionality, plus the ability to add graphics overlays to the output from a single pair of Fill & Key inputs. The Fill & Key are overlayed during a crossfade between two live inputs. This playout type is only available on servers equipped with a Corvid 88 card.

  Simulcast + Fill & Key: Provides the standard Simulclast channel functionality, plus the ability to add graphics overlays to the from two independent Fill & Key input pairs to one or both of the channel outputs. This playout type is only available on servers equipped with a Corvid 88 card.

- **ITX-8823: Two new Channel Control layouts have been added to the iTX Desktop to support Fill & Key channels**

  The Channel Control (Live Fill and Key) and Channel Control Wide (Live Fill and Key) layouts have been added to the iTX Desktop's Global Layouts for the 1920 x 1080 and 1920 x 1200 resolutions.

  These layouts provide much of the same functionality as their standard equivalents, but with the addition of a Fill and Key button that allows operators to quickly see the current state of the Fill and Key inputs on the channels controlled by the active Network channel. Operators can also use the button to manually override the current Fill and Key state (On/Off).

  A Fill & Key button with identical functionality has also been added to the Engineering tab of the Network Channel Controller on the playout server.

- **ITX-8817: Fill & Key plugin added to the iTX Desktop's Content Selector**

  With a Fill & Key license and the channel configured as one of the Fill & Key playout types, operators can use the Fill & Key plugin in the Content Selector on one of the iTX Desktop's Channel Control layouts to manually add the following Fill & Key events as a secondary event to a scheduled video or live event:

  Fill & Key On

  Fill & Key Off

  Fill & Key Duration

  Fill & Key Suppress

  Fill & Key Restore

  Once added to the Schedule Grid, the Fill & Key event is also displayed on the Fill & Key track on the Timeline. See "Working with Fill and Key events" in the iTX Desktop Operator Guide for more information.

- **ITX-8784: 4K secondary record is now supported by a new SDI encode preset (MXF HQX Subtitle)**

  ITX now supports 4K UHD secondary records, with a new SDI encode preset (MXF HQX Subtitle). Like other presets, this preset is not installed by default, but it is supplied in the iTX Install kit as IPCTemplate_MXF_HQX_PCM_Subtitle.itxml.

- **ITX-8783: Encode Server now supports 4K SDI**

  The Encode Server now supports 4K SDI encoding to MXF HQX. This is made possible by a new GV Engine plugin. The following changes have been made to the Encode Service:

  The Encode Server is now 64 bit.

  Encode Server installs Device Controller.

  Encode Server is now configured for one framerate family only.

  Audio Encode is not supported.

  4K SDI and 2SI input are supported.

  Validated running 4 encode servers capturing HD on the same server.

  The Encode Server and its Encode Server Configuration Tool now require the latest version of the AJA drivers bundled with the iTX Installer (12.7.5.4 for iTX 2.12 GA)

- **ITX-8779: New transcode workflow converts 4K HQX MXF clips to XAVC Intra Class 300 MXF**

  A new workflow (HQX Transcode With Proxy and Keyframes) can be configured as a media rule in the Workflow Service to convert raw 4K HQX clips into XAVC 300 class clips and produce proxy and keyframes at the same time.

- **ITX-8777: Manual proxy and keyframe generation using the Workflow service and Media Processing service**

  Clips that have not had keyframes and a proxy media version created (either via the HQX Transcode process or through the usual Delivery Manager import process) can have these versions created manually by way of a simple workflow configured in the Workflow service and issued from a button in the iTX Desktop's Property Editor (Actions tab).

- **ITX-8776: iTX Desktop controls for CGs and Logos now scale up to 4K UHD**

Enhancements have been made to the following iTX Desktop components in support of 4K UHD:

Asset Layout - When a logo asset is selected, the preview viewer can now be scaled to HD (1920 x 1080) or 4K (3840 x 2160) by right-clicking in the preview viewer and selecting the "Viewer Scale HD" or "Viewer Scale UHD" option.

Logo Editor - The Logo Editor scales to the size appropriate to the selected channel (up to 4K). Guide frames (which can be turned on and off) are now available for all screen resolutions up to 4K.

CG Editor - The CG Editor scales to the correct size appropriate to the selected channel (up to 4K).

- **ITX-8772: Added a single channel 4K 2SI playout type**

  The "Single channel 4K 2SI" playout type is now available to Output Servers equipped with an AJA Corvid 44 and AJACorvid 88 SDI video/audio I/O card. Note that Corvid 44 only supports 4K output, while the Corvid 88 supports 4K input and output.

- **ITX-8605: Open subtitles can now be rendered before or after the Vertigo XG graphics rendering**

  If a channel has been configured to use the integrated XG (XG Inside) functionality, then you can use the Rendering Priority setting on the Output Server 2 Configuration dialog to prioritize the rendering of open subtitles to be before or after the XG rendering. Rendering the subtitles before the XG rendering allows them to be rendered on a lower layer. This permits the subtitles to be scaled back with the video when performing a DVE using the Vertigo XG. Rendering the subtitles after the XG rendering produces subtitles on a higher layer, on top of the video.

- **ITX-8423: Network NEWFOR added to Live Subtitle Inputs**

  The NEWFOR Teletext subtitle protocol is now supported by the Live Subtitle Gateway Service. When selected in a channel's Live Subtitle Input configuration, a pipeline is created within the gateway such that the input is configured to process Network Newfor commands received on the Input Port, and send out equivalent XAP commands on the Output Port.

- **ITX-8323: FPP has been rebranded to GV Engine**

  All instances of 'FPP', 'File Processing Pipeline' or 'Flexible Processing Pipeline' in the iTX Installer, iTX Desktop and iTX services have been rebranded as 'GV Engine'. The FPP Job Service has also been rebranded as 'Media Processing Service'.

  In the 'Job Service Manager Config' dialog, an instance of the 'FPP Node' remains so that a downgrade back to an older can be carried out (if required).

- **ITX-7610: Multi-domain support for cross-domain channel configuration**

  When operating iTX playout channels from an iTX Desktop client attached to one of the domains in a multi-domain system, operators can now configure channels from any of the domains in the system. Prior to this change, only the channels attached to the same domain as the iTX Desktop could be configured.

- **ITX-7438: Live subtitles playout has been reintroduced using a new Live Subtitle Gateway Service**

  For channels to playout live subtitle, Live Subtitle Inputs must be configured on the Subtitles tab in the iTX Desktop's Channel Config. The Live Subtitle Inputs map Intents to live subtitle sources, which are then used by the iTX system's new Live Subtitle Gateway Service to route the live subtitle sources to the playout servers. Note that only one gateway is now required for all languages and channels. See "Configuring Live

Subtitles" in the iTX Softel Inside Configuration and User Guide for more information.

Improvements

- **ITX-9836: iTX Desktop's CG Editor features a new Color Picker tool and Group Transparency setting**

  The iTX Desktop's CG Editor's Color Selector tool has been replaced with a new Color Picker tool, which offers a new eyedropper tool for choosing a color based on another item on the screen, as well as an enhanced Alpha setting for setting the object's transparency value.

  Additionally, a Group Transparency slider has been added to the CG Editor's control panel for Rectangle, Image and Animation editor, to allow a transparency value to be applied to the objects belonging to the same group layer.

Fixes

- **ITX-9913: Audio rules become corrupted after being edited**

  Changing the Label associated with an Audio Program no longer results in the audio rule's labels being removed or the rule becoming corrupted.

- **ITX-9779: Secondary records ended before the actual show segment has finished**

  When a schedule restore is performed, a Live event in overrun no longer changes to a 'Done' state and the secondary recording is no longer terminated early.

- **ITX-9590: GPI not triggering from Live channel in Output Server 2**

  TXPlay now reads the Live channel plugin data from the main channel and no longer causes GPIs configured in the plugin to fail.

- **ITX-9566: CG text boxes are not updated live when changes are made to associated text files**

  In Output Server 2, static fields in CG text boxes are now updated with the associated file.

- **ITX-9466: The Workflow Service produces an error when issuing a manual keyframe or proxy media creation job**

  A new workflow (Manual Proxy.xaml) can now be triggered manually as an action for a video asset.

- **ITX-9431: The live events from a bypass channel are still being cued onto slots**

  On a main and live TXPlay system, when an output server control is passed to the -Live channel, the live events on the main channel are cued and then released. As a result, they no longer unnecessarily use up FPP slots.

- **ITX-9388: Over-run and under-run values are incorrectly displayed in the Schedule Grid**

  Selecting the sequence header or the events within the sequence now displays the correct over-run and

under-run values for sequences and schedules.

- **ITX-9365: Pausing a Windows copy to the inbox of a Delivery Manager CIFS endpoint failed the job**

  With the Exclusive Lock disabled for the Delivery Manager CIFS endpoint, performing a Windows copy to the inbox and then pausing the job no longer results in the job failing, but instead the status remains active at 0%.

- **ITX-9356: Live Channel Events not being reported in the As Run file**

  When switching between live and main channels, the events were not being properly reported in the As Run file. Now whenever a channel goes into roll-under, an entry for that channels' on-air item is written to the As Run file (up to the point where the roll-under took effect and the channel went off air).

  The above condition now holds no matter whether it is the Main or -LIVE channel that goes into rollunder, thus ensuring a complete record of on-air items is recorded in the As Run.

- **ITX-9342: Asset metadata is not removed when the Delivery Manager ingest job is cancelled or has failed**

  If an asset ingest is cancelled or has failed, some metadata and details are removed from the asset. For example, if the asset was present prior to the ingest cancellation or failure, the asset metadata and external and iTX locations are now removed. Likewise, if the asset was present but with no locations, upon an ingest cancellation or failure the external and iTX locations are now removed.

  Similarly, if the asset existed with iTX and proxy locations and an Ingest of the same asset was cancelled, the external location is now removed.

- **ITX-9329: VizRT Trio Out Of Memory Exception error**

  Changes were made in Output Server 1 to resolve an Out Of Memory Exception error associated with VizRT Trio.

- **ITX-9282: XML Adaptor throws exception error and stops while JIP event is on air**

  When a JIP event was on air, the XML Adaptor was stopping and would only recover after the end of the event. Now the XML Adaptor no longer stops and no exception appears.

- **ITX-9280: Items are prevented from being copied to the As Run log**

  When the 'Don't Wait for Secondaries' setting is enabled, logos that have been played out no longer maintain a status of On Air and these items are copied to the Standard or BXF As Run Logs.

- **ITX-9227: Incorrect duraction value is displayed when the duration of an event is updated in the Schedule Grid**

  The correct duration value is now displayed in the Schedule Grid and Timeline when the duration of an on-air event is modified using the iTX Desktop's Change media limits pop-up and the new end time is within ten seconds of the current time.

- **ITX-9223: The RSS Streamer service removes the '£' character from any RSS feed**

All types of character encoding are now supported; any character set is now displayed correctly.

- **ITX-9222: GPI logic not followed in roll under**

  When a channel was in roll under, it triggered and cancelled the GPI events that were configured in the Live channel plugin. This has been fixed so that channels in 'rollunder' state no longer trigger the GPI output.

- **ITX-9146: Unable to close the Concurrency Group Configuration dialog in Job Service Manager Configuration**

  Clicking the Cancel button in the Concurrency Group Configuration dialog in the Job Service Manager Configuration (FPP Transcode tab) now closes the dialog. Note that in this release the FPP Job Service Manager has been renamed to Media Processing Service.

- **ITX-9141: Media files dropped into the Delivery Manager inbox were not processed**

  When a large number of media files are placed in the Delivery Manager inbox, all of the files should now be processed without requiring Delivery Manager to be restarted.

- **ITX-9118: Inventory Service only labels the first Inventory in the list**

  Previously, only the name of the first endpoint (top of list) would be displayed and all subsequent endpoints would be displayed without a name. Additionally, there was a limit of 5 endpoints that could be displayed at once. These issues have been resolved.

- **ITX-8996: The Preview window in the Asset Segmentation layout cues to the beginning of the media rather than the in-point of the segment**

  The Preview Window loads correct in-point with segmented clips.

- **ITX-8924: Delivery Manager not adding logical audio language tags to some processed assets**

  There were some scenarios around the re-delivery of content from archives and "external" iTX stores where Deliver Manager would fail to add the correct logical audio language tags to assets.

  Assets affected had been originally delivered via Interchange or to an external store or archive. When restored to the iTX store, the external store could be left with incorrect logical audio language tags. When subsequently purged and then re-restored at a later date, those incorrect tags would be carried over to the iTX store metadata for the asset and audio processing would not be correct.

  Now the metadata remains consistent and correct throughout. Incorrect data that may have been present as a result of the problem is also managed correctly.

- **ITX-8913: Imported assets from Masstech Catchblue system have the 'Available' flag enabled by default**

  Use the defined asset template when finding content on the MassStore system.

- **ITX-8902: Schedule is not retained in the Schedule Grid after a restore**

  Restoring a schedule no longer clears the schedule from the Schedule Grid nor does it prevent the Missing Materials Manager from detecting missing assets from the schedule.

- **ITX-8812: Media not found on the secondary domain by the Media Cache 2 service when scheduled**

  For clips ingested and registered on a secondary domain, referenced on the primary domain by a connection through the Locator service, the media would not be found on the secondary domain by the Media Cache 2 service when scheduled. Multi-domain asset caching has been restored, so now clips present on a different domain can be found and cached locally.

- **ITX-8811: Unable to search the Delivery Manager's CIFS Store root directory**

  It is now possible to perform a Delivery Manager CIFS Store search of the System Volume Information in the root directory, which allows you to copy any assets from this location.

- **ITX-8740: Schedules disappear from Channel Control layout's Schedule Grid under certain conditions**

  The contents of the schedule grid in the iTX Desktop's Channel Control layout disappeared and the channel was labeled as 'Off Air' after switching to a second channel and then back again. Despite this behavior, the channel's playout (sound, video and graphics) was not affected. This issue was resolved by fixing a problem with the Channel Health in the Engineering layout.

- **ITX-8739: Unable to select channels after including channel separators in the iTX Desktop Views**

  Including a channel separator in a View no longer prevents you from selecting the channels contained within the view on the iTX Desktop's Channel Control or the Dual Ingest layouts.

- **ITX-8737: Inventory Service not working with Delivery Manager's PitchBlue endpoint**

  The Inventory Service can now successfully get the inventory from the Delivery Manager's PitchBlue endpoint and flags as Synchronization finished.

- **ITX-8733: Product version, System logs and TXPlay logs missing the iTX version number**

  An issue existed where the iTX product version field was blank. Consequently, the iTX version was missing from the Framework System and Output Server TXPlay logs. This issue has now been fixed.

- **ITX-8648: Altering the shuttle speed in the iTX Desktop preview causes video to freeze**

  When previewing a video asset in the iTX Desktop Preview component, dragging the shuttle slider no longer causes the video on both the iTX Desktop and SDI output device (if enabled) to freeze.

- **ITX-8636: The Up/Down buttons were missing from Delivery Manager Media Sources window in Missing Materials**

  The Up/Down buttons used to define the order of Delivery Manager media sources were missing from the Restore tab in Missing Materials configuration. These have now been restored.

- **ITX-8509: GPI events are retriggered when a schedule is loaded that contains items with a fixed times that are in the past**

  Past events now go straight to Done and the GPI events are not retriggered.

- **ITX-8507: The Schedule Lockout Time in the iTX Desktop incorrectly displays if its value is greater than 24 hours**

  Adding a day counter ensures that the Schedule Lockout Time in the iTX Desktop is now correctly displayed when its value is greater than 24 hours. For example, 28 hours is now displayed as 1 04:00:00:00.

- **ITX-8470: SmartClient produced an error when saving changes to a video asset that was imported with Delivery Manager using Audio Import Rules**

  In SmartClient, modifying and saving a video clip that was ingested using Delivery Manager's Audio Import Rules no longer causes an error upon saving and the language intents remain intact.

- **ITX-8433: Center aligned subtitles displayed incorrectly**

  When importing a closed STL file with center justified subtitles, additional spaces are no longer inserted into the subtitle and the justification/alignment remains as expected.

- **ITX-8395: The Now field in the Channel Control layout displays the name of the graphic element currently on air**

  The 'Now' field in the iTX Desktop's Channel Control layout displays the name of the main video element rather than the graphic element that is currently on air.

- **ITX-8328: Cancelling an Ingest job when the Delivery Manager CIFS EndPoint's Exclusive Lock setting is disabled locks the job status**

  If an asset copied to an inbox monitored by a Delivery Manager CIFS EndPoint whose Exclusive Lock setting is disabled and the ingest job is cancelled, the Job no longer gets stuck in a cancelling state.

- **ITX-8281: SCTE End Sequence is not ending a sequence**

  In Output Server 2, the SCTE End Sequence message is processed and a sequence is ended.

- **ITX-8209: Missing Materials purges secondary events that appear in the schedule**

  The checks for whether secondary items were in the schedule were not being carried out correctly.

  A fix was made in this release to only purge video items and never purge any secondaries irrespective of whether they are scheduled. This fix includes removal of the 'Purge Video Only' button from the Missing Material service.

- **ITX-8145: Delivery Manager does not keep Ardome metadata**

  Restoring from the Delivery Manager Ardome plugin now results in the following Ardome metadata being retained: Asset Name, Title, Sub Type, Clip In-Point, Clip Out-Point, Media In-point, Media Out-point and Aspect Ratio.

- **ITX-7796: GPIs are triggered at the wrong time due to time zone settings**

  GPIs are now triggered at the correct time even if the Output Server and the Framework Server are configured for different time zones.

- **ITX-7649: Importing a schedule in Media Watcher with a start time over 24 hours results in an SQL exception**

  When importing an iTXML schedule using Media Watcher, the start time of a clip may be scheduled by setting the Date in Summary/StartDate and the time in Summary/StartTimecode. If the Timecode is greater than or equal to 24:00:00, the schedule was rejected by Media Watcher and the following log entry was produced: Conversion failed when converting date and/or time from character string. This issue has been resolved so that the schedule is no longer rejected and the schedule start time is calculated correctly.

- **ITX-7642: OPUS Reindex was slow to process**

  You can now configure whether the Custom Metadata Types are searchable and if the Metadata Events are included as virtual metadata assets in the index. The time to create the index and the size of the index will be according to these configurations. If everything is set (so all metadata types are searchable and all metadata events will be created as separated metadata assets), then the time to create the index may be hours. On the other hand, if everything is not set, then it can take only minutes (depending on the number of assets). These configurations are in the Management tab of the OPUS Service.

- **ITX-7606: Logo asset details not applied are correctly**

  When importing logo events via BXF schedule import, the logo details (e.g. width, height) are now displayed correctly when viewing the logo event in the iTX Desktop's Content Editor.

- **ITX-5887: An error appears when linking a NTSC subtitle asset to a NTSC video asset**

  A subtitle asset containing subtitle locations of any frame rate can now be linked to a video asset of any frame rate with drawing an error.

- **ITX-4647: Secondary records on a 720p channel create a 30 fps clip**

  In case of 720p, the Pandora audio pipeline generates an audio packet at 29.97 (video is at 60 DF), which was not supported by the ITX Encoder.

  In the iTX Encoder, we are now dividing the audio packet into two and adjusting the time stamps accordingly.

Accessing the iTX Installer

The iTX 2.12 software is distributed as an iTX Suite zip file, which must be downloaded onto the machine where you want to install the iTX software modules.

To access the iTX Installer:

1. Copy the official release version of the iTX Suite zip file (e.g. ITX Suite 2.12 - Build 3.212.12.1245.zip) to a local drive on the machine you want to install the software on. Never attempt to run the iTX Installer from a network share.
2. Unzip the file.

   If the computer security settings prevent you unzipping the file:

   a. Right-click the zip file and select Properties from the displayed menu commands. The Properties window appears.

   b. Select the General tab in the Properties window and click Unblock.

   c. Click OK to close the Properties window.
3. Once the file is unzipped, open the iTX Suite v2.12 folder.

   The folder contains the Setup.exe file which you use to launch the iTX Installer.

   The following two subfolders are also included to support the installation, but require no immediate attention:

   - Drivers: contains the required device drivers for the SDI video cards that are used with the iTX Output and Encode servers. You must ensure you are using the

correct AJA drivers for the version of the Output Server service you have installed. For more information on installing the Output Server service see the iTX System Administrator Guide.

- iTX Install: contains the iTX installation and iTX system files that are required to manage and run the iTX software.

  WARNING: Never use or modify the files in the iTX Install folder, except when instructed by our personnel. Always use the Setup.exe file and iTX software module user interfaces to configure and operate iTX. This minimizes the risk of unintentionally damaging the iTX system.

Supported Devices and Software

NOTE: THIS VERSION OF ITX REQUIRES AN UPDATED AJA DRIVER (V 14.3.2.1) FOR OUTPUT SERVER 2, ENCODE SERVERS AND ITX DESKTOPS USING AN AJA CARD FOR SDI PREVIEW. THEY CAN BE FOUND, ALONG WITH INSTRUCTIONS ON INSTALLATION, WITHIN THE DRIVERS DIRECTORY OF THE ITX INSTALL PACKAGE. MORE DETAILS IN THE VIDEO PLAYOUT AND INGEST SECTION BELOW.

iTX 2.12 can work with a range of devices, including those listed below.

For more details of which firmware versions are supported, contact our Technical Support Services team.

External Playout Devices

With the appropriate plug-in licenses, iTX 2.12 supports the following devices for on-air control.

External Logo plug-in

- Grass Valley LGK-3901 v4.10.2 card in a Densité frame

External Subtitle plug-in

- Screen Polistream v2.4.1.2
- Softel Swift TX M-Series 2.01
- Cavena STU v3.1.17

Clarity plug-in

- Pixel Power Clarity graphics system v7.2.7.8

VizRT plug-in

- VizRT Viz Engine v3.8.1
- VizRT Viz Trio v3.0.0, MSE v2.0.1.13083
- VizRT Viz Multichannel v3.0.0, MSE v4.10.0.16507

iTX Master Control

- Grass Valley Imagestore 750 , v4.10.6.001
- Grass Valley Imagestore Modular 3901, v4.8
- Grass Valley iMC-Panel-100, v7.2.10.0_ECO_18578 - 2012_10_16
- Grass Valley iMC-Panel-200, v7.2.10.0_ECO_18578 - 2012_10_16
- Grass Valley iMC-Panel-300, v7.2.10.0_ECO_18578 - 2012_10_16

Vertigo XG plug-in

- XG Inside: Vertigo Suite v5.2 (5.2.85.0) for Output Server 1
- XG Inside: Vertigo Suite v6.0 SP3 (6.0.37.0) for Output Server 2
- External Vertigo: Vertigo Suite v4.8 SP7 through to v5.4 SP3 for both Output Server 1 and Output Server 2

Routers iTX 2.12 can work with a range of broadcast routers via the following router controllers. - Grass Valley NVision NV9000 and NVision 920 It can also control the following routers directly.

- Grass Valley Densité HCO-3901 v1.2.7

GPI devices iTX 2.12 supports the following GPI devices.

- Grass Valley: Densité GPI-1501 v1.0.0
- Videoframe: VNODE 8x8; VNODE 16x16; VNODE 32x32

External content stores iTX v2.12 can work with media files on the following types of external storage system.

Devices	Supported functionality
EMC Isilon OneFS (v8.0.0.7)	Searching, retrieving and storing.
SGL FlashNet Archive (v6.4.13.003)	Searching, restoring, manual archiving and manual restoring.
Front Porch Digital DIVArchive (v7.2.2.14)	Restoring, partial restoring; archiving and deleting of media files.

Front Porch Digital DIVArchive (v7.3.1.109)	Restoring, partial restoring; archiving and deleting of media files.
Viz Ardome	Retrieval of media files.
Suitcase TV archive system	Restoring of media files.
Omneon Server	Retrieval of media files, using FTP.
GVG Profile	Retrieval of media files, using FTP.
Masstech MassStore (v 7.5.3)	Restoring, archiving and deleting of media files.

Third-Party Applications

- Interra Baton automated file-based QC v6.4.62938
- TeleStream Vantage Workflow v4.2.286 (for import, transcode and render jobs)
- iTX SmartClient can export ShotLists as Final Cut Pro v5.0 XML files, which can opened using Grass Valley Edius v8.10 onwards.

Note:

iTX support for the following third-party applications has now ended:

- ENPS versions 5 and 6 - MOS Protocol 2.83

QA Environment and Platform

This release of iTX has been qualified by our Quality Assurance team using the following third-party software, hardware and operating systems.

Operating Systems and Other Software

iTX Framework Services

- Windows Server 2016 Standard (64 bit)
- Windows Server 2012 R2 Standard
- Microsoft Windows Server 2008 R2

iTX Database

- SQL Server 2016 Standard Edition (64-bit)
- Microsoft SQL 2014 Service Pack 2
- Microsoft Windows Server 2008 R2 running Microsoft SQL Server 2008 Service Pack 3 (version 10.0.6560)

iTX Output Server

- Windows Server 2016 Standard (64 bit)
- Windows Server 2012 R2 Standard
- Microsoft Windows 7 Ultimate SP1 64 bit edition (version 6.1 build 7601) for Grass Valley Playout Appliance 1 Servers (OS1)
- Microsoft Windows Server 2008 R2 for Grass Valley Playout Appliance 2 Servers (OS2)
- Microsoft Windows Server 2012 R2 for Grass Valley Playout Appliance 2 Servers (OS2)
- Microsoft Windows Server 2016 Standard for Grass Valley Playout Appliance 2 Servers (OS2)

iTX Desktop Client

- Windows 10 Professional 64-bit version 1803
- Windows 10 Professional 64-bit version 1809
- Windows 10 Professional 64-bit Edition
- Microsoft Windows 7 Ultimate SP1 64-bit edition (version 6.1 build 7601) - Microsoft Windows 7 Professional SP1 64-bit Edition

Other Hardware and Software

Video Playout and Ingest Cards

For encode servers running the Encode Services:

- AJA Corvid LP with Drivers 14.3.2.1, Firmware 0x36 dated 17-03-17 - AJA Kona 3G with Drivers 14.3.2.1, Firmware 0xA, dated 17-03-17 For output servers running Output Server 1:
- AJA Corvid LP with Drivers 7.4.0.49, Firmware 0x34 dated 25-02-19 - AJA Kona 3G with Drivers 7.4.0.49, Firmware 0xA, dated 11-07-04 For output servers running Output Server 2:
- AJA Corvid LP with Drivers 14.3.2.1, Firmware 0x36, dated 17-03-17
- AJA Corvid 44 with Drivers 14.3.2.1, Firmware 0x1c, dated 04-04-19
- AJA Corvid 88 with Drivers 14.3.2.1, Firmware 0x34, dated 25-02-19 - AJA Kona 3G with Drivers 14.3.2.1, Firmware 0xA, dated 17-03-17 For desktop SDI Preview:
- AJA Corvid LP with Drivers 14.3.2.1, Firmware 0x36, dated 17-03-17

System Time Code Generation

- Adrienne Time Code Card with drivers 1.0.0.7

Video Router and Router Controller

- Nvision NV8576+ router (software version 14.0.0.11)
- Nvision NV9000 router controller (software 6.2.0.1674)

Monitoring and Control

- iControl GMS v7.30

iTX Software Anti-Virus Qualification

This version of the iTX software install package was scanned with Symantec Endpoint Protection Version 14 (14.2) build 770 (14.2.770.0000) with Virus and Spyware Protection definitions dated 1 October 2021 and found to contain no currently known viruses.

Grass Valley User Documentation

Product manuals and other user documentation is available online via the Grass Valley Documentation Library at http://www.grassvalley.com/docs/page

Access to product manuals and white papers is prohibited without authentication. There are multiple authentication paths available to verify your identity.

Broadcast customers:

- If you already have a Grass Valley Service Portal account, you can login via http://www.grassvalley.com/support/portal
- If you do not have a Grass Valley Service Portal account, you can request one via http://www.grassvalley.com/support/service_portal_access_request

Alternately:

- If you already have a Grass Valley website account, you can login via http://www.grassvalley.com/auth
- If you do not have a Grass Valley website account, you can sign up via http://www.grassvalley.com/account

Contact Us

For technical assistance, contact our international support center at 1-800-547-8949 (US and Canada) or +1 530 478 4148.

To obtain a local phone number for the support center nearest you, please consult the Contact Us section of Grass Valley's web site (http://www.grassvalley.com/contact). An online form for e-mail contact is also available from the web site.