

# Release Notes TTA2.51.00

## ULTRASOUND WORKSPACE

### What you should know about the new release

Congratulations to the purchase of your new Software Product and thank you for choosing us as your partner. In addition to the manual and training of our application specialists, we would like to inform you about some product details in this release note.

#### Clinical application packages part of TTA2:

- IMAGE-COM
- 4D LV-ANALYSIS
- 4D RV-FUNCTION
- 4D CARDIO-VIEW
- 4D MV-ASSESSMENT
- 4D SONO-SCAN
- 2D CPA
- FETAL 2D CPA
- AutoStrain LV / SAX / RV / LA
- REPORTING
- TOMTEC DATACENTER (incl. STUDYLIST, DATA MAINTANANCE, WEB REVIEW)

#### Changes to previous release

Module	Function	Description
All	Operating System Support	Support of Windows 11 for the client Operating Systems
All	New Transducer	Support of new Philips transducer X11-4t
Q-Apps	Transducer support	Synchronized support of Q-Apps in TT and QLAB
TOMTEC DATACENTER	Administration Long-Term Archiving	The archiving and storage validation functionality has been improved to gain more reliability in case of missing responses, pending activity or in case of small network interruptions or other environmental disturbances. As one part, pending archiving activity is retried with an increasing delay so that a network interruption up to 2 days can be recovered without service interaction. Note: For troubleshooting archiving issues, scheduled archiving tasks should be considered reflecting the archiving retries as well as the task_execution.log entry "apply retry delay".

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<b>TOMTEC DATACENTER</b>	Administration DICOM Connectivity	For misconfigured image acquisition devices fail to close its DICOM associations, TOMTEC DATACENTER now blocks only the misconfigured device when more than 5 DICOM associations stay open in parallel.
<b>TOMTEC DATACENTER</b>	Administration DICOM Connectivity	The DICOM Received timeout property can now be configured on the level of seconds in addition to the level of minutes.
<b>TOMTEC DATACENTER</b>	Administration HL7 Connectivity	Improvement on the HL7 workflow where yet unprocessed orders are now staying in the study status "No Images" even if a user opens IMAGE-COM on the order.
<b>TOMTEC DATACENTER</b>	Administration HL7 Connectivity	It is now possible to customize HL7 outbound messages to include either the user name or the logon name of the user displayed in STUDY LIST, for each of the following columns: <ul style="list-style-type: none"> <li>viewed by</li> <li>analyzed by</li> <li>reported by</li> <li>finalized by.</li> </ul> The additional properties are available in the software appendix HL7_outbound_available_mapping_values.txt file as configuration template.
<b>TOMTEC DATACENTER</b>	Administration Rule Management	The rule Import ReportData Structured Reports will get inactivated with the update to TTA2.51.00 as it is only needed when migrating DICOM SR data from TTA2.21.XX to higher versions where it can be activated conditionally.
<b>TOMTEC-ARENA</b>	Administration Rule Management	Troubleshooting on the measurement mapping background tasks has been improved. It is now possible to log and trace successful measurement mappings tasks if configured.
<b>TOMTEC DATACENTER</b>	DATA MAINTENANCE Export De-Identified	The de-identified export has been refined. Besides the de-identification of the data as displayed on the user interface, additional patient data related tags are exported de-identified now in addition. Details can be found in Annex II, section list of de-identified DICOM attributes.
<b>TOMTEC DATACENTER</b>	TTD Integration Interface	The TTD Integration Interface now provides the possibility to setup a connection and authentication test when setting up the TTD Integration Interface from 3 <sup>rd</sup> party application towards the TOMTEC DATACENTER. Request the Callup Interface Specification documentation to get further details.
<b>TOMTEC DATACENTER</b>	TTD Integration Interface	The TTD Integration Interface now waits for the arrival of the called study for a maximum of 30 seconds (configurable). While waiting for the called study arriving the user sees the progress message "Waiting for DICOM data...". Request the Callup Interface Specification documentation to get further details.
<b>TOMTEC DATACENTER</b>	TTD Integration Interface	Where the Wait for object in study is configured in a callup to TOMTEC DATACENTER, the user can now proceed to reporting where the DICOM object was not received or measurements have not been mapped within 30 seconds (configurable) of waiting time. Request the Callup Interface Specification documentation to get further details.
<b>INSTALLER TOOL</b>	SQL Server Installation	Microsoft SQL Server 2016 Express has been exchanged with Microsoft SQL Server 2019 Express in the Installer tool as default deployed database. For further details on the supported SQL versions refer to the Technical Specification document.

## Resolved Complaints

Module	Error ID	Description
TOMTEC DATACENTER	INV-1596	In Desktop Client application, the Reporting did not always open on double click after a dual monitor setup has been configured.
TOMTEC DATACENTER	INV-1586	Where images with identical DICOM series and instance number are displayed in the image list of the de-identified export, the system did incorrectly select or deselect additional images from the same list.
TOMTEC DATACENTER	INV-1588	De-Identified export failed for images with 16 bit depth (e.g. XA images).
TOMTEC DATACENTER	INV-1550	On de-identified export, the DICOM tag (0010,1001) Other Patient Names has been exported identified.
TOMTEC DATACENTER	INV-1566	Archive status did not update to success due to pending or failed storage validation for certain studies migrated from the legacy product Image-Arena.
TOMTEC DATACENTER	INV-1555, INV-1559	Archive validation and archiving to long-term archive failed sporadically due to small disconnects between TTA and the PACS or between TTA and the database.
TOMTEC DATACENTER	INV-1539	Rules to publish data to the audit trail sporadically failed due to references on duplicate patients in database. The following rules have been sporadically failing: <ul style="list-style-type: none"> <li>Publish Study state change events to the FHIR Server</li> <li>Publish measurements changes as Study state change events to the FHIR Server</li> </ul>
TOMTEC DATACENTER	INV-1595	Last quick filter selection of the user has not been restored after the same user did log in again.
TOMTEC DATACENTER	PA-6486	When reopening the user settings after configuration, the Monitor Selection configuration on Client Setup tab did not reflect the last configured state, even if the configuration has been correctly applied.
TOMTEC DATACENTER	PA-6351	Remove current filter icon in STUDY LIST was incorrectly activated after the user returned from Administration to STUDY LIST.
TOMTEC DATACENTER	PA-6311	Quick filter Name of the recently applied quick filter disappeared after selecting it from the quick filter dropdown menu even though the quick filter was still correctly applied.
TOMTEC DATACENTER	PA-6272	Crash happened if multiple users configured DICOM Devices simultaneously within the Server Administration.
TOMTEC DATACENTER	PA-6271	The play icon to start the archive under Server Administration >> Archive did not correctly initiate a storage validation of the archive. The storage has been only validated within the next configured interval (by default within 15 minutes).
TOMTEC DATACENTER	PA-6258	When the user clicked the Select All or Unselect all option for multiselect boxes those did close immediately instead of staying open so that the user could readjust the selection.
TOMTEC DATACENTER	PA-6255	Searching a patient name containing ^ (e.g. Doe^John) in STUDY LIST filters as well as in a DICOM query to TOMTEC-ARENA did not return any results.
TOMTEC DATACENTER	PA-6251	The parameter aetitle to force the import of a called study using the TTD Integration Interface to TOMTEC did not work so that as a workaround the device parameter had to be used.

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TOMTEC DATACENTER	PA-6230	When adding a DICOM Device or an HL7 Device, an 'unsaved changes' message popped up when saving. When confirming the message with 'OK', the device has been added to the list and it is possible to continue right away.
TOMTEC DATACENTER	PA-6203	When a new DICOM structured report arrived at the system, while working in IMAGE-COM or REPORTING, it sometimes happened that the measurements performed in IMAGE-COM were getting overwritten by the arrived data after several minutes of work.
TOMTEC DATACENTER	PA-6560	TOMTEC-ARENA denies HL7 ORM^001 order messages using the V2.3 standard date time format "YYYYMMDDHHMMSS" for requested date/time (e.g. OBR.6.1). A workaround configuration has been available which now can be configured back to the factory standard.
TOMTEC DATACENTER	PA-6580	The existing rule template <i>Map SR when STUDY is NEW or VIEWED</i> has been adapted. For customers who are running on this configuration with TTA2.50.00, the existing rule must be adapted to the new state of the rule template. This must happen directly with the update to TTA2.51.00.
IMAGE-COM	INV-1576	In case of previous study review and opening a report pdf out of the patient history, the study content from the previous study is empty.
IMAGE-COM	IC-2149, IC-2097, IC-2094, IC-2046, IC-2104	Minor issues with thumbnails and view layouts (view layout reset after Bookmark creation, inconsistent thumbnail behavior with previous studies in combination with secondary studies, layout inconsistency and heart cycle selection after view layout changes).
IMAGE-COM / Stress-Echo	IC-2125	Missing update of Wall Motion Icon after re-labeling of an image
INSTALLER TOOL	INST-46	The TTA Server installer is setting a default service dependency for externally or manually installed SQL Servers when installed on the system. This dependency causes a failing update when the system is upgraded with the Update functionality to a higher version. This Service dependency has been removed for Server installation scenarios to avoid any upgrade issues for future updates.
INSTALLER TOOL	INST-40	When using "Repair" on an installation, the encrypted database password is reset, causing that the DB connection cannot be established after a Repair anymore. This has been resolved.
MEASUREMENTS	INV-1616 MEAS-672	Pediatric Heart Network (PHN) z-score normal range calculation for upper and lower limit was incorrect and has been corrected to correctly follow the PHN guideline. Nevertheless, the z-score value calculation has always been correct.

## Resolved Vulnerabilities

Module	CVE	Description
IMAGE-COM & CAPs	CVE-2018-25032	This vulnerability concerning the third-party library zlib allowed execution of arbitrary code for example via manipulation of DICOM files or resource files of the application. The library zlib has been updated to fix this issue.

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## Language Support

The following languages are supported ( \* for Instructions for use only, Software language: English):

- English
- Bulgarian\*
- Chinese simplified
- Chinese traditional
- Croatian\*
- Czech\*
- Danish
- Dutch
- Estonian\*
- Finnish
- French
- German
- Greek\*
- Hungarian\*
- Indonesian\*
- Italian
- Japanese
- Kazakh\*
- Korean\*
- Latvian\*
- Lithuanian\*
- Macedonian\*
- Norwegian
- Polish\*
- Portuguese
- Romanian\*
- Russian
- Serbian\*
- Slovak\*
- Slovenian\*
- Spanish
- Swedish
- Turkish\*
- Vietnamese\*

## Hints

Module	Function	Description
2D CPA / FETAL 2D CPA	Export	AVI export and Secondary capture is always the B-Mode clip with contour overlay.
2D CPA / FETAL 2D CPA / AutoStrain LV/ SAX/ RV/ LA	Color & Doppler data	DICOM clips containing color/Doppler data are not suitable for analysis with this module but can be loaded.
4D LV-ANALYSIS	Automated workflow	Automated workflow does not work for TEE data.
4D MV-ASSESSMENT	Automated initialization	Automated initialization is not available for TTE data. Automated initialization works only for TEE data from Philips and GE.
4D MODULES /Stress Echo	4k screens	There might be display issues with 4k monitors in combination with windows zoom factors. The text size is now limited but not all elements are scalable.
4D MODULES	User Documents / Manual	In case of single monitor the user documentation and manual might open in the background of the advanced package, if you try to open it via the "Help" or "Documentation" button in the About Box. Please close or minimize the advanced application to read / select the document.
4D MODULES	Measurement Export	The measurement export (txt, csv) is not translated. Exported result names and units are English only.
4D MODULES/ 2D CPA	Units	Settings of IMAGE-COM regarding units are not transferred to the modules.
4D MODULES/ 2D CPA /Q-Apps	Log-off	Logoff while 4D module / 2D CPA / Q-App is open closes the module without saving results.
All	SQL Server 2014 Support	Support of SQL Server 2014 and lower is discontinued and TOMTEC-ARENA will not run anymore. A database upgrade of the used SQL Server to at least Version 2016 is mandatory BEFORE performing the update installation to this version. Please contact your service representative if further information is needed.
ALL	Log info for GE compressed data	GE Vivid 4D format "raw compressed" is not supported – a WRN in the log file is added for an easier troubleshooting.
ALL	Modality Setting Transfer Syntaxes	The following transfer syntax (using JPG2000) shall not be used due to performance issues: <ul style="list-style-type: none"> <li>- 1.2.840.10008.1.2.4.90 JPEG 2000 Image Compression (Lossless Only)</li> <li>- 1.2.840.10008.1.2.4.91 JPEG 2000 Image Compression</li> </ul>
ALL	Modality Configuration	All modalities shall be configured to send images only on study closed to avoid that not all images

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		and results are displayed when IMAGE-COM is opened.
ALL	About Box - Help	To open the manual within the zero footprint solution ("Help" Button in the About Box), a pop-up is forced to open the manual. This is blocked by default by most of the browsers. If the user adds an exception for TTZ the manual will pop up.
ALL	ECG display	ECG information is only displayed, if information is offered by US device. Please contact your device manufacturer for settings information.
ALL	Monitor Resolution	Changing the OS monitor resolution or scaling requires a restart of the client.
ALL	OS Hardening	TOMTEC-ARENA will not function on a Windows operating system that has been hardened or configured to prevent unsigned executables or libraries to be executed. The current workaround is to remove the hardening/configuration on PC's that will be running TOMTEC-ARENA which will lower the overall security level and may increase the risk of security breaches.
AutoStrain LV / RV / LA	Automated workflow	Automated workflow does not work for TEE data.
AutoStrain LV	EF	EF measurement is not available for TEE data. Workflow steps remain grayed out.
AutoStrain LV / RV / LA	Bookmarks	Bookmarks of versions older than TOMTEC-ARENA 2.50.00 are not supported anymore.
AutoStrain LV	Supported data	AutoStrain supports BMode clips with a single calibrated region only. Triplane or x-plane acquisitions are not loaded.
IMAGE-COM	Semi-automated standard measurements	In comparison to the already known Add-ins (AutoLV, AutoStrain, AutoLA) the frame, where the measurement shall be performed, needs to be preselected in B-Mode Clips.
IMAGE-COM	Measurement menu presets	The measurement menu might have display issues for measurement menu presets including column based measurement packages. As a workaround select first the factory preset and switch to the user preset directly.
IMAGE-COM	Measurement menu presets	After upgrade to TTA2.51.00 measurement menu presets might result in IMAGE-COM freeze due to changes in the measurement menu configuration. Please forward the files to Service & Support or re-create the user preset with the TTA2.51.00 measurement menu editor.
IMAGE-COM	Measurement menu presets	Measurement menu presets only affect the measurement menu itself, neither the Worksheet nor the Measurement List and its derived PDF print. The synchronization between IMAGE-COM and Worksheet menu is no longer available in case a preset contains user defined groups and packages.

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IMAGE-COM	Measurement menu presets	In case of creating own presets for the measurement menu the user must be aware of quality seal settings. Switching measurements off is under responsibility of the user.
IMAGE-COM	Measurement menu presets	Some measurement packages cannot be changed or duplicated because of a direct link of measurement in the code. A lock symbol is displayed to mark these packages. Left Ventricle Simpson Strain (3P) Left Atrium LA Vol (Simpson) Right Atrium RA Vol (Simpson)
IMAGE-COM	Measurement menu presets	Default groups can only be changed limitedly: You can change the order of the included packages and measurements or de-select/select the packages and measurements. It is not possible to add packages and measurements from another default group. Therefore, a new group must be created to combine desired packages and measurements.
IMAGE-COM	Measurement menu presets	Renaming of default packages is not allowed. Only own created packages can be re-named.
IMAGE-COM	Measurement menu presets	It is not possible to configure laterality measurements into different packages, i.e. splitting up left and right or segmental vascular measurements into different measurement groups and/or packages.
IMAGE-COM	Zero Semi-automated measurements	In Zero, semi-automated measurements (AutoStrain, AutoLV, Standard Semi-automated Measurements) last a little longer for each first time start of IMAGE-COM because dlls need to be loaded.
IMAGE-COM	Thumbnail display of 3D data	IMAGE-COM displays the reference clip / image saved with the 3D dataset as thumbnail. Not all ultrasound carts export this reference clip/image and therefore a black 3D thumbnail might be displayed. The advanced tools can still be operated from it.
IMAGE-COM	Reload study	A reload of primary studies is not supported in IMAGE-COM. Primary studies need to be reloaded via the study list before launching IMAGE-COM
IMAGE-COM	AutoSTRAIN	If the user deletes the contour of one view the contours of the other views are also deleted.
IMAGE-COM	Secondary Study Review	Limitation <ul style="list-style-type: none"> <li>• Due to performance issues, the number of secondary studies displayed in the patient history is limited to three.</li> <li>• Measurements of secondary studies can be displayed.</li> </ul>

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		<ul style="list-style-type: none"> <li>• New measurements can only be performed for primary studies. Only Generic measurements, which are not saved back to platform.</li> <li>• Additional DICOM data as secondary captures cannot be saved on secondary studies</li> <li>• 4D CAPS cannot be launched by a secondary study.</li> <li>• Worksheet is available only for the Primary Study</li> </ul> <p>Not all settings are set independent for secondary and primary studies.  The following settings apply to all studies</p> <ul style="list-style-type: none"> <li>- Brightness / Contrast</li> <li>- Synchronization</li> <li>- Speed</li> <li>- 1:1 display</li> </ul>
<b>IMAGE-COM (Partner integrations)</b>	Unsupported modality type	IMAGE-COM opens with a blank screen if the modality type is not supported.
<b>IMAGE-COM, Cath-QCA</b>	Recommended minimal length of caliper line	The start and end points of the measurement must be placed in a healthy part of the vessel. The start and end points must be at least one lesion length away from the lesion. Start and end point can still be moved after setting.
<b>IMAGE-COM Zero</b>	Feature gap	The following features are currently not available in the TOMTEC-ARENA zero-footprint solution of IMAGE-COM: Analysis (All CAPs).
<b>IMAGE-COM / REPORTING</b>	Secondary study review	In case of reporting and review of secondary studies, the images and the reporting may not be in synch.
<b>INSTALLER TOOL</b>	SQL Installation port configuration	In case you perform a Single-Seat or Server installation with an SQL Instance, please make sure that the standard used port is either opened within the Windows firewall or the firewall is turned off. Otherwise, the SQL installation might fail.
<b>INSTALLER TOOL</b>	Folder permissions	Due to preconfigured policies it might happen that the "TOMTEC-ARENA AppServer (TTA2)" is not allowed to access / write to folders. (E.g. the runtime/temp folder). One of the symptoms is a failing export of studies. A manual creation of the required folders usually solves the issue.
<b>INSTALLER TOOL</b>	SQL Server compatibility	SQL Server versions older than SQL Server 2016 are not supported by TTA. A manual upgrade or reinstallation of the existing SQL Server to version 2016 or higher prior installation of TTA is required prior the Update.
<b>MEASUREMENTS</b>	Units & Precision	This customization option does not affect results that are shown within CAPs. Units & Precision of generic measurements may have differing factory default dimensions. Therefore, it might happen that a labeled distance (e.g. RVAWd) is shown in

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		cm whereas its corresponding generic distance measurement is in mm. If the simultaneous display of these results is not wanted, the show local checkbox of the Measurement Display tab can be switched to off in IMAGE-COM.
MEASUREMENTS	Measurement Mapping	Measurement mapping files are case sensitive for finding keys. In rare cases measurement mapping might not work due to inconsistencies in capitalization. If a measurement appears to no longer being mapped after upgrade to TTA2.51.00, please create a measurement mapping request to get an updated mapping file.
MEASUREMENTS	Quality Seal light	Changes of recommended fields require a new start of the software.
MEASUREMENTS	z-scores	The z-score normal ranges are calculated with 95% confidence interval (1.96 standard deviation).
Q-Apps	Log-off	If a QLAB is open during log-off, it takes 1 minute to reopen it after login.
Q-Apps	Launch	The first start of QLAB after re-start of the platform can last a while due to start of QLAB in the background.
Q-Apps	Export Secondary Studies / Save to file	When using save or export button within QLAB without opening any other dialogue it can happen that QLAB is running in an UI deadlock which causes the application to be unusable. In this case the software does not react anymore. The application must be manually shutdown and the PC must be re-started.
Q-Apps	Not supported dataset	If dataset is not supported the message can appear in the background and cannot be confirmed. In this case the software does not react anymore. PC must be re-started.
Q-Apps	SR export	If a user triggers multiple SR exports during one session only the last one will be imported by IMAGE-COM.
Q-Apps	Q-Apps do not launch out of IMAGE-COM	QLAB requires the Microsoft Visual C++ 2010 Redistributable Package, which is not automatically installed with the integrated version of QLAB. In case the affected PC has no Microsoft Visual C++ 2010 Redistributable Package this needs to be installed.
REPORTING	Finalized Reports	Please be aware the DICOM header of a finalized DICOM PDF Report holds the information "VERIFIED" in tag 0040,A493 (Verification Flag). This tag will not be changed when a report gets un-finalized later. The reason is, that it is not possible to guarantee unlimited access to the object (e.g. in case the object is already archived to a long-term archive). An additional object with UNVERIFIED" in tag 0040, A493 (Verification Flag) will be created. Correct processing of the objects by 3 <sup>rd</sup> parties is within their responsibility.

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REPORTING	Update	All reports must be finalized prior to an update to TTA 2.51.00
REPORTING	Update	Reports from TTA 2.20 or older are not supported within the update. To keep the reports, the user has to make sure that all relevant reports are either printed and archived or stored as PDF externally and archived prior to the update.
REPORTING	State Preliminary	When Report content is edited in any way during the status Preliminary, the status does not change automatically back to "Started". This must be done manually and is important in case a trigger is set to send the preliminary report. Because the already sent preliminary report is not updated automatically.
REPORTING	Drag & drop images from reporting thumbnails	When inserting a multi-frame image from the thumbnail bar to the dynamic preview only the first frame is added to the print report.
REPORTING	Deprecated Fields	The warning for content of a report belonging to deprecated fields is not visible in report state "Finalized". It will appear only in the following states: <ul style="list-style-type: none"> <li>• Report status "Started" or "Preliminary"</li> <li>• After changing the workspace for a study</li> <li>• After a finalized report is re-opened.</li> </ul>
REPORTING	REPORTING customization	It is recommended that only one user is working in reporting customization at a time. It is also recommended to only perform customizations when no user is reporting.
REPORTING	Audit Log	Audit Log data from TTA 2.31 or older may not be readable properly within higher versions. In case this data is needed, please forward the files to Service & Support.
REPORTING	Dual monitor setup	It is recommended to use a dual monitor setup with equal monitor resolution and size. Using different resolution and size might cause a mouse cursor shift for some dropdown lists in REPORTING and REPORTING customization, which will impede navigation slightly. Hint: Even if the items cannot be reached by the cursor, they can be accessed with the arrows on the keyboard and applied with "Enter" button.
REPORTING	Header and Footer customization	When adding an image please ensure that the image is completely visible. If not, just click on the image and the window will automatically adjust. Please also note that for huge headers or footers including tables and/or with setting "Display header only on first page", they could overlap report content.
REPORTING	Drop downs customization	If an item is selected to be default for a single selection drop down and user wants to remove the customization, just select the drop down and delete it and add it again without being default

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REPORTING	Screen Resolution and scaling	For dropdowns with long contents, it might happen that the dynamic preview overlaps depending on the screen resolution and scaling. Reducing the scaling or increasing the resolution is needed to read those dropdowns properly.
REPORTING	Printing from PDF preview	When printing directly from PDF preview it can happen that the margins get small cut-off. If the report is saved and then printed it would look perfect.
REPORTING	Drawing in Jasper	Please note that the preview from a drawing could include difference on the Jasper report when edges are sharp.
TOMTEC DATACENTER	Database password encryption	The password for the TOMTEC-ARENA database user is getting encrypted with the update to TTA2.50.00 or higher versions. Checking the plain text password to ensure it is known is advised before the update.
TOMTEC DATACENTER	HTML inline frame	TTD Integration Interface is configured to be embedded in an HTML inline frame, the current supported chrome and edge browser versions do only allow the callup using an https proxy configuration.
TOMTEC DATACENTER	HL7 and patient matching configuration	When activating the HL7 interface, the patient matching automatically considers patient ID only for the HL7 interface. Further details can be found in the Server Administration guide.
TOMTEC DATACENTER	Data check for HL7 Interface	Where productive patient data are already in the TOMTEC-ARENA, before activating HL7 interface, the quality must be assessed. Further details can be found in the Server Administration guide.
TOMTEC DATACENTER	Audit Trail for HL7 messages	HL7 Audit events will be listed when TTA receives HL7 update messages which are unrelated to the data persisted in TOMTEC-ARENA. When searching by patient ID and comparing to prior state, it is possible to check if changes were applied or not.
TOMTEC DATACENTER	Auto archive configuration	When using the auto archive configuration from totec.properties, ensure the gap between threshold and max size in working archive is at least twice the size of studies received per day.
TOMTEC DATACENTER	Query/Retrieve SCP	Requesting all studies of TOMTEC-ARENA multiple times within a short timeframe impacts the performance of the system and should be avoided.
TOMTEC DATACENTER	Access permissions	When installing or updating TOMTEC-ARENA, make sure the Windows user/TTA service user permissions are sufficient for the installed directory, import and export folders used as well as file archives and file exchange folders used. Further details on required access permissions are available in the Server Administration Guide.

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TOMTEC DATACENTER	Local archives	The local archives including Import Folder, Working Archive, Online Cache and Thumbnail Folder must be locally on the server or accessible with a low latency and high bandwidth comparable to local access.
WORKSHEET	Scaling Factor	Following maximum scaling factors for the worksheet are recommended: HD monitors: 150% 4k monitors: 400%
WORKSHEET	Dual monitor setup	It is recommended to use a dual monitor setup with equal monitor resolution and size. Using different resolution and size might cause a zoomed measurement list PDF.

## Known Bugs

Module	Description
AutoStrain LV / RA / RV / SAX	<p>Bookmarks saved in the workflow step Cardiac Cycle cannot be opened by AutoStrain. This also affects reopened and then edited bookmarks that are saved in the Cardiac Cycle step.</p> <p>There exist workarounds that prevent this from happening:</p> <p>A) Saving a new bookmark: Don't save the bookmark in the Cardiac Cycle step, but always in the Analysis or Tracking Revision steps.</p> <p>B) Editing a previously saved bookmark: To trigger the dialog for saving bookmarks, go to the Cardiac Cycle step. Do not save the bookmarks in the Cardiac Cycle step, but go to the Analysis step again and save the new bookmark there.</p>
2D CPA	<p>TID5220 export uses wrong FindingSite for export of LA Volume measurements from 2D CPA package. Measurement labels in software are correct. Re-importing the study into TOMTEC maps the results correctly back to LA Volume measurements.</p> <p>Please contact Service &amp; Support to get an updated measurement mapping file for TID5220 to correct the export for LA volume measurements from 2D CPA package for TTA2.51.00. (RPT-7677)</p>
4D MODULES	<p>Waiting widget runs into endless loop. If working archive is full and read only. The waiting widget is running into an endless loop if you save a bookmark in a CAP and close the cap.</p>
4D RV-FUNCTION	<p>TTA is also released for pediatric data. Our tracking works and did not change due to the heart model (publications are still valid). Nevertheless, the first initialization can fail for very small hearts, if landmarks and initial orientation is done by heart model. Re-enter the view adjustment is required to trigger a re-tracking so the tracking is working fine again.</p>
4D SONO-SCAN	<p>When loading a bookmark, the application may not be in the exact same state as when the bookmark was saved. E.g. when loading a bookmark which was saved in the curved slice mode, the application does not show the corresponding menu in the tool space, so that the user must select it again if he wants to edit the curved slices. (PLGVIEW-1240)</p>
4D SONO-SCAN	<p>In Disc-Summation mode the reset button is without effect. The result can still be deleted by a button in the corresponding tool space section. (PLGVIEW-1097)</p>
4D SONO-SCAN	<p>Annotation is not possible in reference view of Multi-Slice D'Art mode. (PLGVIEW-1102)</p>
4D SONO-SCAN	<p>The state of the slice- and rotation animation is not stored in bookmarks. (PLGVIEW-1104)</p>
4D SONO-SCAN	<p>An annotation can be deleted by a double left mouse click or a right mouse click while hovering the cursor over them. (PLGVIEW-1201)</p>
IMAGE-COM	<p>Printing an SR out of the pdf viewer does not work. Please print via worksheet or reporting.</p>
IMAGE-COM	<p>The MMT Adult license is requested with IC start not with selection of the measurement tab. It is released as expected when a different tab or another exam type is selected.</p>
IMAGE-COM	<p>New created objects like secondary captures are sometimes sorted to the beginning of a study instead of staying at the end when closing Image-Com.</p>
IMAGE-COM (Partner integrations)	<p>No Measurements are exported if the export format is configured in Image-Com config.xml and report export parameter is handed over through a command-line parameter at the same time. (INT-699)</p>
IMAGE-COM ZERO	<p>Exporting secondary captures and movies in AVI format out of IMAGE-COM ZERO can take long time for data containing many frames.</p>
INSTALLER TOOL	<p>When installer is pausing with a message hinting to blocked TCP/IP ports and then is cancelled by the user, then continuing the installation fails. After Re-Installation the connection to the database must be configured manually.</p>

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<b>INSTALLER TOOL</b>	In case the installer detects an existing database during the installation, the message with that information window is opened behind the installation progress bar. The installation window shall be moved and to reach the message, otherwise the installer will not continue.
<b>INSTALLER TOOL</b>	When using an SQL Instance name which exceeds 16 characters or a special character, the TTA installation will fail.
<b>REPORTING</b>	When printing a report using Edge browser version 44.17763.831.0, the PDF displays a blank page between the report pages. Edge shall not be used for printing reports directly from the browser, the PDF shall be downloaded and printed.
<b>TOMTEC DATACENTER</b>	Sporadically performance issues on servers with two active network connections. (PA-4226)
<b>TOMTEC DATACENTER</b>	For file archives located on a DFS (Distributed File Shared), the drive size and file size are calculated incorrectly. (PA-4248)
<b>TOMTEC DATACENTER</b>	Issues on starting IMAGE-COM when the path to the review executable in client.properties contains commas (e.g. C:\executable,review\IC). (PA-4300)
<b>TOMTEC DATACENTER</b>	Pending tasks in SERVER ADMINISTRATION are not executed after uncontrolled shutdown of TTA server or the database. Therefore, after an uncontrolled shutdown, the task log must be checked thoroughly. (PA-4307)
<b>TOMTEC DATACENTER</b>	If IMAGE-COM fails to start it can happen that the study stays locked and the license is still kept. In such a case an administrative user can solve the situation by unlocking the study from the SERVER ADMINISTRATION area. (PA-4356)
<b>TOMTEC DATACENTER</b>	DICOM tags Study Description or Series Description with more than 255 characters are truncated at import. (PA-4373)
<b>TOMTEC DATACENTER</b>	When changing the archive configuration of existing archives, the archive is not immediately validated. In case of a misconfiguration, this may lead to a read only state displayed by messages after a delay of several minutes instead of instant feedback. (PA-4566)
<b>TOMTEC DATACENTER</b>	It is not possible to perform a database migration from TTA2.2x to TTA2.3x and higher using the database migration tool. (PA-4803)
<b>TOMTEC DATACENTER</b>	When changing the monitor display the Desktop Client may not immediately react to the circumstances such as a different resolution of the display. A client restart solves this problem. (PA-5581)
<b>TOMTEC DATACENTER</b>	When searching in STUDY LIST, wild card characters such as underscore '_' (e.g. 'TTE_test') are getting ignored. ( PA-5702)
<b>TOMTEC DATACENTER</b>	In a setup one screen is configured to be displayed duplicated on another screen via the OS display settings, the Desktop Client does not appear on the intended position according to configuration. (PA-5959)
<b>TOMTEC DATACENTER</b>	When multiselecting from the thumbnail preview in DATA MAINTENANCE for object deletion on the very right of the bar, the thumbnail bar may scroll to the very left directly with the selection. (PA-6151).
<b>TOMTEC DATACENTER</b>	When changing the OS resolution or scaling, the Desktop Client may not immediately react to the circumstances such as a different resolution of the display. A client restart solves this problem. (PA-6193)
<b>TOMTEC DATACENTER</b>	In the erroneous condition where at least one long-term archive is offline, it may happen that in IMAGE-COM patient history in addition to the offline data of the patient, online prior studies are not loaded in addition. IMAGE-COM displays a warning that priors are incomplete. (PA-6218)
<b>TOMTEC DATACENTER</b>	In a special case where a 3 <sup>rd</sup> party application sends a C-FIND request on the DICOM series or DICOM images containing patient or study module data to TOMTEC DATACENTER, it may not deliver the full results in the response. (PA-6241)
<b>TOMTEC DATACENTER</b>	Auto Archiving does not fully recover from error states so that when starting a new storage validation on the Working Archive the Auto Archiving is not re-initiated and the Working Archive is running full without active intervention. (PA-6266, INV-1553, INV-1555)
<b>TOMTEC DATACENTER</b>	In some rare cases corrupt DICOM files are imported to TOMTEC DATACENTER where the import should be failed due to incomplete DICOM information. (PA-6402)

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TOMTEC DATACENTER	<p>Downloading a DICOM-file diverges between the web browser and the desktop client solution:</p> <ul style="list-style-type: none"> <li>• Desktop client: raw DICOM file is downloaded</li> <li>• Web Client: raw DICOM file is updated with the edits in DATA-MAINTENANCE (e.g. edit patient/study or split and merge functionality). (PA-6412)</li> </ul>
TOMTEC DATACENTER	<p>When many quick filters (e.g. more than 40) have been added within STUDY LIST, the dropdown selection gets cut off at the bottom of the display so that the last items may not be reachable anymore from the dropdown selection. (PA-6474)</p>
TOMTEC DATACENTER	<p>Using TTD Integration Interface, when one callup has been done using invalid credentials, the next callup on the same location directs to login screen even if valid authentication information has been passed. (PA-6499)</p>
TOMTEC DATACENTER	<p>When the user settings are changed from a dual monitor setup to a single monitor setup, the double click on selected study option "load images and report" may stay available even if not applicable. (PA-6509)</p>
TOMTEC DATACENTER	<p>In DATA MAINTENANCE, the Scrollbar jumps to the top when multiselecting several entries in the file list. (PA-6523)</p>
TOMTEC DATACENTER	<p>If the TOMTEC-ARENA service gets restarted while tasks are still executing in the task log, it may happen that failed tasks could not be retried via the task log afterwards. (PA-6559)</p>
TOMTEC DATACENTER	<p>When editing the <i>Referring Physician</i> in Data Maintenance Edit Patient and Study tab, it is not possible to adjust prefix, middle name or suffix for existing entries. (PA-6578)</p>
TOMTEC DATACENTER	<p>For the TTD Integration Interface, the URL callup directs to the WEB REVIEW module instead of IMAE-COM, if one user accessed the Web Review directly from TOMTEC STUDY LIST before. (PA-6583)</p>
TOMTEC DATACENTER	<p>Examples on HL7 mapping extensions as delivered in appendix for the purpose of HL7 interface customizations are incomplete. Affected example is using_mapping_extensions.txt. In case HL7 mapping extension configuration is to be done on the level of HL7 fields including component or sup component separators, the configuration can be requested from TOMTEC development. (PA-6586)</p>
TOMTEC DATACENTER	<p>Rule <i>Import ReportData Structured Reports (ID 14)</i> fails to be executed when activated. This rule's purpose is to recover reports created with TTA2.2x to a modifiable state with import or resync to TTA2.3x and higher (PA-6589).</p>
TOMTEC DATACENTER	<p>Thumbnail previews are not generated anymore after a broken DICOM dataset (e.g. zero length color palette information) has been imported. After restarting the TOMTEC-ARENA service, the thumbnails previous are re-generated correctly.</p>
WORKSHEET	<p>The default filename for .txt and .pdf measurement export from the worksheet TTA Zero does not contain the study UID, but only the export date. (MEAS-465)</p>

## Known Vulnerabilities (with MEDIUM or HIGH security risk)

No vulnerabilities with are classified as a MEDIUM or HIGH security risk that affect the product known, till 2022-07-01.

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**Update information to TTA2.51.00**

From installed version	IMAGE-ARENA 4.7	IMAGE-ARENA 4.7 with TTA IMAGE-COM (Hybrid)	TTA 2.4x
To TTA2.51.00			
Review DICOM files originating from modality	✓	✓	✓
Review measurement values (in WS) created in IC	as EncPDF (IA) in IC	✓	✓
Review/Edit overlays of measurements in IC	✗	✓	✓
Reopen AutoStrain (from SR)	n.a.	✓	✓
Open CPA Bookmarks	✗	✓	✓
Open AutoStrain LV / RV / LA Bookmarks	n.a.	n.a.	✗
Open 4D CAP Bookmarks	✓ Exceptions: GE created with TTA version < TTA2.4x ✗ Exception: 4D RV-FUNCTION 2 Bookmarks will not be supported with 4D RV- FUNCTION 3	✓ Exceptions: GE ✗ version < TTA2.4x ✗ Exception	✓ Exceptions: GE ✗ version < TTA2.4x ✗ Exception
Access finalized Reports	✓ as EncPDF (IA) in IC	✓ as EncPDF (IA) in IC	✓
Access Report content (restore entered findings)	✗	✗	✓
Take over report status	✗	✗	✓
Reuse Reporting Customization	✗	✗	✓
Reuse configuration of DICOM endpoints	✗	✗	✓
Reuse configuration of Users/Groups/Permissions	✗	✗	✓
Reuse LicenseFile.xml	✗	✗	✓

## ANNEX I

### New Measurements

The following measurements have been added for TTA2.51.

Exam Type	Measurement Group	Package	Label	Measurement Description
<b>Point-of-Care</b>				
	Abdomen			
		Aorta		
			R Iliac Art AP	Iliac Artery - Vessel lumen diameter - Anterior-Posterior - Right
			R Iliac Art Transverse	Iliac Artery - Vessel lumen diameter - Transverse - Right
			L Iliac Art AP	Iliac Artery - Vessel lumen diameter - Anterior-Posterior - Left
			L Iliac Art Transverse	Iliac Artery - Vessel lumen diameter - Transverse - Left

### Deleted Measurements

The following measurements have been deleted for TTA2.51.

Exam Type	Measurement Group	Package	Label	Measurement Description
<b>Adult Echo</b>				
	Left Ventricle			
		AutoStrain LV SAX		
			GCS Endo Peak Avg	Left Ventricle - Global Peak Circumferential Strain - endocardial - Average
<b>Pediatric Echo</b>				
	LV Volume - Function			
		AutoStrain LV SAX		
			GCS Endo Peak Avg	Left Ventricle - Global Peak Circumferential Strain - endocardial - Average
<b>Point-of-Care</b>				

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	Abdomen			
		Aorta		
			Iliac Art AP	Iliac Artery - Vessel lumen diameter - Anterior-Posterior
			Iliac Art Transverse	Iliac Artery - Vessel lumen diameter - Transverse

## ANNEX II

### List of de-identified DICOM attributes

The following DICOM attributes are de-identified when using the de-identified export:

DICOM Attribute Name	DICOM Tag	Deidentification Action <sup>1</sup>
Patient's Birth Date	(0010,0030)	D, U
Patient's Name	(0010,0010)	Z, U
Patient's Sex	(0010,0040)	D, U
Patient ID	(0010,0020)	D, U
Study Date	(0008,0020)	D, U
Study Description	(0008,1030)	Z, U
Study Time	(0008,0030)	D, U
Acquisition Comments	(0018,4000)	X
Additional Patient History	(0010,21B0)	X
Allergies	(0010,2110)	X
Confidentiality Constraint on Patient Data Description	(0040,3001)	X
Country of Residence	(0010,2150)	X
Current Patient Location	(0038,0300)	X
Discharge Diagnosis Description	(0038,0040)	X
Distribution Address	(4008,011A)	X
Distribution Name	(4008,0119)	X

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Image Comments	(0020,4000)	X
Image Presentation Comments	(0028,4000)	X
Imaging Service Request Comments	(0040,2400)	X
Interpretation Diagnosis Description	(4008,0115)	X
Interpretation Text	(4008,010B)	X
Last Menstrual Date	(0010,21D0)	X
Medical Alerts	(0010,2000)	X
Military Rank	(0010,1080)	X
Names of Intended Recipients of Results	(0040,1010)	X
Occupation	(0010,2180)	X
Other Patient IDs	(0010,1000)	X
Other Patient IDs Sequence	(0010,1002)	X
Other Patient Names	(0010,1001)	X
Patient's Address	(0010,1040)	X
Patient's Age	(0010,1010)	X
Patient's Birth Name	(0010,1005)	X
Patient's Birth Time	(0010,0032)	Z
Patient's Institution Residence	(0038,0400)	X
Patient's Insurance Plan Code Sequence	(0010,0050)	X
Patient's Mother's Birth Name	(0010,1060)	X
Patient's Primary Language Code Sequence	(0010,0101)	X
Patient's Primary Language Modifier Code Sequence	(0010,0102)	X
Patient's Religious Preference	(0010,21F0)	X

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### TTA2.51.00

Patient's Sex Neutered	(0010,2203)	X
Patient's Telecom Information	(0010,2155)	X
Patient's Telephone Numbers	(0010,2154)	X
Patient Comments	(0010,4000)	X
Patient State	(0038,0500)	X
Pregnancy Status	(0010,21C0)	X
Pre-Medication	(0040,0012)	X
Reason for Study	(0032,1030)	X
Reason for Omission Description	(300C,0113)	X
Reason for the Imaging Service Request	(0040,2001)	X
Referenced Patient Photo Sequence	(0010,1100)	X
Region of Residence	(0010,2152)	X
Requested Procedure Comments	(0040,1400)	X
Requested Procedure Description	(0032,1060)	Z
Requested Procedure ID	(0040,1001)	X
Requested Procedure Location	(0040,1005)	X
Results Comments	(4008,4000)	X
Smoking Status	(0010,21A0)	X
Study Comments	(0032,4000)	X
Text Comments	(4000,4000)	X
Text String	(2030,0020)	X
Visit Comments	(0038,4000)	X
Study Instance UID	(0020,000D)	D

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Series Instance UID	(0020,000E)	D
SOP Instance UID (this includes references to a certain SOP Instance UID listed in other DICOM attributes)	(0008,0018)	D

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<sup>1</sup>Deidentification Action:

- X = DICOM tag is removed
- Z = Replaced with empty value
- D = Replaced with a dummy value
- U = User can overwrite