

Release Notes

TOMTEC-ARENA TTA2.42.00

What you should know about the new release

Congratulations to the purchase of your new TOMTEC Software Product TOMTEC-ARENA TTA2 and thank you for choosing TOMTEC Imaging Systems GmbH 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:

- TOMTEC-ARENA SERVER & CLIENT
- IMAGE-COM
- ECHO-COM
- REPORTING
- AutoStrain LV / RV / LA
- 2D CARDIAC-PERFORMANCE ANALYSIS (Adult and Fetal)
- 4D LV-ANALYSIS
- 4D RV-FUNCTION
- 4D CARDIO-VIEW
- 4D MV-ASSESSMENT
- 4D SONO-SCAN

Changes to previous release

| Module | Function | Description |
|---------|---------------|--|
| General | Data format | Additional support of GE SW V204 & 3D Philips Affiniti |
| General | Probe support | Support of 3D GE6Vc-D probe |

Resolved Error Reports

| Module | Error ID | Description |
|-----------------------|------------|--|
| GENERAL | CPINF-1979 | Image quality fix for 3D Canon datasets |
| MEASUREMENT MAPPING | INV-1479 | ESV (BP) is mapped wrong - pediatric unit |
| REPORTING / IMAGE-COM | INV-1408 | Order of stress stages in Reporting is now consistent with order in IMAGECOM. |
| REPORTING | INV-1386 | Order of stress stages in workspace is now consistent with order in print preview. |

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| REPORTING | INV-1419 | Fixed memory leak caused by report server rendering. |
| REPORTING | INV-1434 | Open Report in partner integration with choice list default customization will not throw exception. |
| REPORTING | RPT-6945 | Improved Dutch translations. |
| REPORTING | RPT-6881 | Customization in Jasper render updated in case of multiple partner integration rendering instances. |
| REPORTING | RPT-6995 | Images in report issue has been fixed to avoid images getting lost or swapped on print report. |
| IMAGE-COM / Cath-QCA | IC-1919 | The semi-automated stenosis quantification add-in button is visible again. The missing Cath-QCA module number is added. |
| IMAGE-COM | INT-655 | IMAGE-COM opens in defined DefaultWindow settings value again. |
| TOMTEC DATACENTER® | INV-1473 | Sporadic failure to start the desktop application after a logoff or session timeout happened. |
| TOMTEC DATACENTER® | INV-1444 | White screen displayed when calling the desktop application via TOMTEC-DATACENTER Integration Interface. |

Resolved Vulnerabilities

| Module | CVE | Description |
|--------------------|----------------|---|
| TOMTEC DATACENTER® | CVE-2020-17510 | 3 rd party library vulnerability, where sending a manipulated http request from within the network to the TOMTEC-ARENA could lead to the acquisition of unauthorized access to TOMTEC-ARENA. |
| IMAGE-COM | CVE-2020-8112 | 3 rd party library vulnerability, where sending a manipulated JPEG contained in a DICOM file to TOMTEC-ARENA from within the network could lead into a buffer overflow which may result in leakage of sensitive information. |

Language Support

The following additional languages are supported (**Manual only**, Software language: English):

- Bulgarian
- Czech
- Estonian
- Greek
- Hungarian
- Indonesian
- Kazakh
- Korean
- Latvian
- Lithuanian
- Macedonian
- Polish
- Romanian
- Serbian
- Slovak
- Slovenian
- Slovak
- Slovenian
- 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 | 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 | 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 | GE data load / bookmarks | There is an update of GE data versions. Please refer to technical specification which data are supported by our applications. GE bookmarks will not be loaded from TTA2.3x |
| 4D MODULES | Bookmarks | Due to new data formats, it is possible that some bookmarks do not load as expected. Ultrasound data and model might be misaligned. Regarding bookmark compatibility, please see chapter "Update information". |
| 4D MODULES/ 2D CPA | Units | Settings of IMAGE-COM regarding units are not transferred to the modules. |

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| 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 | Deviation values from User Manual | The MMTs deviation section of the user manual is referring to international guidelines and do show deviation values. If no value is given the parcel is marked "none"! |
| 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"> - 1.2.840.10008.1.2.4.90 JPEG 2000 Image Compression (Lossless Only) - 1.2.840.10008.1.2.4.91 JPEG 2000 Image Compression - 1.2.840.10008.1.2.4.92 JPEG 2000 Part 2 Multicomponent Image Compression (Lossless Only) - 1.2.840.10008.1.2.4.93 JPEG 2000 Part 2 Multicomponent Image Compression |
| ALL | Modality Configuration | All modalities shall be configured to send images only on study closed to avoid that not all images and results are displayed when IMAGE-COM is opened. |
| ALL | About Box - Help | In order 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 TTA Zero the manual will pop-up. |
| ALL | 32 bit Operating System (OS) | For TOMTEC-ARENA Single Seat Variant, 32 bit OS is not supported. For further Details consider Technical Specification TOMTEC-ARENA for version TTA2.40.00 |
| 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. |
| AutoStrain LV / RV / LA | Automated workflow | Automated workflow does not work for TEE data. |
| IMAGE-ARENA / 4D RV-FUNCTION | Bookmark compatibility | Bookmarks done with 4D RV-FUNCTION 2 are not compatible with 4D RV-FUNCTION 3 on an IMAGE-ARENA platform. |
| 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 | Asian Characters | Annotations can be added also in Asian characters. |

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| IMAGE_COM | Re-named color palette | Color palette name was changed from "skin" to beige. |
| IMAGE-COM | AutoSTRAIN | If the user deletes the contour of one view the contours of the other views are also deleted. |
| IMAGE-COM | Measurement menu presets | In case of creating own presets for the measurement menu the user has to 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, de-select/select and add packages limited to this group but not add measurements from other groups. Therefore, a new group has to be created. Measurement menu presets only affect the measurement menu itself, neither the Worksheet nor the Measurement List and its derived PDF print. |
| IMAGE-COM | Measurement menu presets | Renaming of default packages is not allowed. Only own created packages can be re-named. |
| IMAGE-COM | Secondary Study Review | Limitation <ul style="list-style-type: none"> • Due to performance issues, the number of secondary studies displayed in the patient history are limited to three. • Measurements of secondary studies can be displayed. • New measurements can only be performed for primary studies. Only Generic measurements, which are not saved back to platform. • Additional DICOM data as secondary captures cannot be saved on secondary studies • 4D CAPS cannot be launched by a secondary study. • Worksheet is available only for the Primary Study <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"> - Brightness / Contrast - Synchronization - Speed |

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| | | - 1:1 display |
| IMAGE-COM | Units & Precision | This customization option does not affect results that are shown within CAPs. Moreover, it only affects labeled measurements, but not unlabeled measurements such as generic distance, area or velocity. Units and precision of generic measurements remain on factory default regardless of the selected option. Therefore, it might happen that a distance is shown in centimeters 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'. |
| IMAGE-COM, Cath-QCA | 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. |
| IMAGE-COM Zero | Feature gap | The following features are currently not available in the TOMTEC-ARENA ZERO solution of IMAGE-COM: Fading, Secondary Capture Creation of Multiframe Images, Image Export as clip, Show/Hide local and global MDA, Advanced Analysis (All CAPs). |
| IMAGE-COM / REPORTING | Secondary study review | In case of reporting and review of secondary studies, the images and the reporting may not be in synch. |
| INSTALLER TOOL | 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. |
| INSTALLER TOOL | Q-Lab interface in Server-Installer | The TTA Server Installer does not register the Q-App interface automatically. This needs to be done manually in case Q-Apps are installed on the server. |
| INSTALLER TOOL | 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. |
| Q-Apps | Log-off | If a Q-App is open during log-off, it takes 1 minute to reopen it after login. |
| Q-Apps | SR export | If user triggers multiple SR exports during one session only the last one will be imported by Image-Com |
| Quality Seal light | Changes of recommended fields | Changes of recommended fields requires a new start of the software. |

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| 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 on. 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 rd parties is within their responsibility. |
| REPORTING | Update | All reports must be finalized prior to an update to TTA 2.40. |
| 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 has to 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"> • Report status "Started" or "Preliminary" • After changing the workspace for a study • After a finalized report is re-opened. |
| REPORTING | REPORTING customization | It is recommended that only one user is working in the reporting customization at a time. |
| REPORTING | Audit Log | Audit Log data from TTA 2.31 or older may not be readable properly within TTA 2.40. 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. |

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| 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. |
| TOMTEC DATACENTER® STUDY LIST | Archiving selected data | To archive one or multiple selected studies from STUDY LIST, the permission "DICOM Editor" is necessary. |
| TOMTEC DATACENTER® STUDY LIST | Patient Name Search | TOMTEC-ARENA does not support to filter for a patients name including the middle name, but the middle name is displayed in the results. |
| TOMTEC DATACENTER® | Network & Performance | When a TOMTEC-ARENA Server Client scenario is setup and the server has two physical network connections. In one of them the users may have a significantly lower performance. |

Known Bugs

| Module | Description |
|-------------------------|--|
| 2D CPA, FETAL 2D CPA | Values in the research result export to *.csv/*.txt can be different from the values displayed in the software when the user changes the heart cycle or the position of the ROI in segmental analysis. The export always contains the original values not the ones for changed cardiac cycle borders. |
| 4D MODULES | Export of txt files to USB stick with insufficient disk space: no error message. In case of enough disk space, export works successfully, in case of no disk space, error message appears. (CPINF-919) |
| 4D MODULES | 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. |
| 2D & 4D MODULES | Clinical application packages do not open in defined DefaultWindow settings value. The suggested workaround is to switch the Windows monitor settings. |
| 4D SONO-SCAN | 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 has to select it again if he wants to edit the curved slices. (PLGVIEW-1240) |
| 4D SONO-SCAN | 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) |
| 4D SONO-SCAN | Annotation is not possible in reference view of Multi-Slice D'Art mode. (PLGVIEW-1102) |
| 4D SONO-SCAN | The state of the slice- and rotation animation is not stored in bookmarks. (PLGVIEW-1104) |
| 4D SONO-SCAN | An annotation can be deleted by a double left mouse click or a right mouse click while hovering the cursor over them. (PLGVIEW-1201) |
| AutoStrain LV / RV / LA | When trying to export measurements as txt file to a USB stick with insufficient disc space an empty txt file is saved. No error message displays. Workaround: free up disk space on USB stick. |

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| IMAGE-COM | Printing an SR out of the pdf viewer does not work. Please print via worksheet or reporting. |
| IMAGE-COM | User Setting for image driven workflow is not saved after TTA was re-opened. |
| IMAGE-COM | If an image is moved via drag and drop to the diagnostic area paging is continuing at the previous position. |
| INSTALLER TOOL | 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 has to be configured manually. |
| INSTALLER TOOL | 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. |
| INSTALLER TOOL | When using an SQL Instance name which exceed 16 characters or a special character, the TTA installation will fail. |
| REPORTING | 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. |
| REPORTING | Finalizer and preliminary setter settings are not taken over from Administration settings. The order on the print report is always <PREFIX><FIRST><LAST>. (RPT-5676) |
| REPORTING | Dynamic labels of workspaces in which studies are mapped (e.g., "Abdominal Duplex" and "Renal Duplex"), are not translatable in workspace label bar and dialogs of workspace (with and without deprecated fields). After the study is re-opened in Reporting all labels are translated as expected. (RPT-5627). |
| TOMTEC DATACENTER® General | After doing a logoff and re-login, the desktop client application does not minimize to the taskbar anymore by clicking the minimize icon. It is necessary to exit and restart the application from the desktop icon. After this the minimize functionality is available. |
| TOMTEC DATACENTER® General | In case there is a custom scaling configured in the operating system, it may happen that the TOMTEC-ARENA desktop application is cut- off or not showing the monitor numbering in the expected size. In this case the scaling on the operating system needs to set to 100%. (PA-4271) |
| TOMTEC DATACENTER® General | When receiving DICOM Data, TTD cuts the data at 255 characters. But for DICOM Tags such as Study Description or Series Description more characters are allowed according to DICOM Standard. (INV-1110) |
| TOMTEC DATACENTER® General | The desktop application does not startup where a hostname for the server connection is added with uppercase letters. (INV-1316) |
| TOMTEC DATACENTER® General | The TTD Integration Interface does not fully support the Image-Arena backward compatibility. Adaptions on the callup are still necessary in this scenario. (PA-5420) |
| TOMTEC DATACENTER® General | The sub folder "tasks" in the Log folder of TOMTEC-ARENA cannot be copied during runtime. If logs need to be copied, this folder needs to be left out. (INV-1198) |
| TOMTEC DATACENTER® General | On export, large temporary files are not immediately removed from the <Root>\Runtime\Temp folder but after some minutes. (INV-1097) |
| TOMTEC DATACENTER® STUDY LIST | Each time scrolling through the STUDY LIST to move the study selection the system skips one study with the selection change.(PA-2914) |

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| <p>TOMTEC DATACENTER® STUDY LIST</p> | <p>When doing a query on a remote repository by date of birth, the result display all dates in the range from the entered value into the future. As a workaround the range search should be inserted instead in the format 'YYYYMMDD-YYYYMMDD' (example: "20020909-20020909") (INV-1404)</p> |
| <p>TOMTEC DATACENTER® STUDY LIST</p> | <p>When doing a query on a remote repository, when hitting the Enter Key, TTA sporadically reverts to the last user input. This can be avoided by using the 'Search Filter' icon. (PA-5452)</p> |
| <p>TOMTEC DATACENTER® SERVER ADMINISTRATION</p> | <p>It is not possible to add a second user with identical first and last name to the system. (PA-3542)</p> |
| <p>TOMTEC DATACENTER® SERVER ADMINISTRATION</p> | <p>The DICOM connectivity from/to a DICOM Device fails when it was added including a special character such as "/", "\", ".", "[", or "]". (PA-2886, PA-2986)</p> |
| <p>TOMTEC DATACENTER® SERVER ADMINISTRATION</p> | <p>For file archives located on a DFS (Distributed File Shared), the drive size and file size is calculated incorrectly. (PA-4248)</p> |
| <p>TOMTEC DATACENTER® SERVER ADMINISTRATION</p> | <p>If multiple transfer capabilities (e.g. C-ECHO, C-STORE) are configured for a DICOM Endpoint, the system uses the merges both configurations instead of explicitly using the single transfer capability configuration (INV-1426)</p> |
| <p>TOMTEC DATACENTER® SERVER ADMINISTRATION</p> | <p>Studies are staying partially archived with data remaining in the Working Archive of TOMTEC-ARENA when data are already existing on the LTA or when the C-FIND based storage validation misses results or failes. All issues can be resolved by a reconfiguration of rules in the TTD Communication Manager. (INV-1349, INV-1452, INV-1372)</p> |
| <p>TOMTEC DATACENTER® SERVER ADMINISTRATION</p> | <p>When measurements have been changed in TOMTEC-ARENA after a study has been marked for archiving, no additional SR is generated afterwards. The changes are not send to LTA and not available in the file system as SR. (INV-1475)</p> |
| <p>WORKSHEET</p> | <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. (RPT-6930)</p> |

Update information to TTA2.42.00

| From installed version | IMAGE-ARENA 4.7 + TTA2.3x CAPs | IMAGE-ARENA 4.7 + Call-up TTA/IC TTA2.3x | TTA 2.4x |
|--|--|--|-----------------------|
| To TTA2.42.00 | | | |
| 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 4D CAP Bookmarks | ✓ Exceptions: GE ✗ Exception: 4D RV-FUNCTION 2 Bookmarks will not be supported with 4D RV-FUNCTION 3 | ✓ Exceptions: GE ✗ | ✓ Exceptions: GE ✗ |
| 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 | ✗ | ✗ | ✓ |

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| n of DICOM endpoints | | | |
| Reuse configuration of Users/Groups/Permissions | x | x | ✓ |
| Reuse LicenseFile.xml | x | x | ✓ |

ANNEX I

Units and Precision – Comparison of Customization Options

(Fields marked in blue: differences to backwards Compatibility)

| Dimension | Dimension | Backward Compatibility | | Recommended | | Core Lab | | Option 1 | | Small Animals | |
|-------------------|---|------------------------|-----------|-------------|-----------|----------|-----------|----------|-----------|---------------|-----------|
| | | Units | Precision | Units | Precision | Units | Precision | Units | Precision | Units | Precision |
| DISTANCE | Distance | mm | 2 | mm | 2 | mm | 1 | mm | 2 | mm | 2 |
| DISTANCE_MED | Medium distance | mm | 0 | cm | 2 | mm | 0 | mm | 0 | mm | 1 |
| DISTANCE_LARGE | Large distance | cm | 2 | cm | 1 | cm | 1 | cm | 1 | cm | 2 |
| AREA | Area | cm2 | 2 | cm2 | 2 | cm2 | 2 | cm2 | 1 | cm2 | 2 |
| VOLUME | Volume in ml | ml | 2 | ml | 1 | ml | 0 | ml | 0 | ml | 1 |
| VOLUME_CM3 | Volume in cm3 | cm3 | 2 | cm3 | 2 | cm3 | 0 | cm3 | 2 | cm3 | 2 |
| VOLUME_PER_TIME | Volume per time | l/min | 2 | l/min | 2 | l/min | 1 | l/min | 1 | l/min | 3 |
| CURVE | Curve | mm | 1 | mm | 1 | mm | 0 | mm | 1 | mm | 1 |
| PERCENT | Percent | % | 1 | % | 1 | % | 0 | % | 1 | % | 2 |
| VELOCITY | Velocity | m/s | 2 | m/s | 2 | m/s | 1 | m/s | 2 | m/s | 2 |
| VELOCITY_MM | Velocity in mm | mm/s | 2 | mm/s | 2 | mm/s | 0 | mm/s | 2 | mm/s | 1 |
| VELOCITY_CM | Velocity in cm | cm/s | 0 | cm/s | 0 | cm/s | 1 | cm/s | 0 | cm/s | 0 |
| VELOCITY_CM_PREC2 | Velocity in cm with Precision 2 | cm/s | 2 | cm/s | 2 | cm/s | 1 | cm/s | 1 | cm/s | 0 |
| PRESSURE | Calculated pressure | mm[Hg] | 2 | mm[Hg] | 2 | mm[Hg] | 0 | mm[Hg] | 0 | mm[Hg] | 1 |
| PRESSURE_PER_TIME | Pressure per time | mm[Hg]/s | 2 | mm[Hg]/s | 2 | mm[Hg]/s | 0 | mm[Hg]/s | 2 | mm[Hg]/s | 2 |
| ACCELERATION | Acceleration | m/s2 | 2 | cm/s2 | 1 | m/s2 | 1 | m/s2 | 2 | m/s2 | 2 |
| HEIGHT | Height | m | 2 | m | 2 | cm | 0 | m | 2 | m | 2 |
| SINDEX | Index based on body surface area | ml/m2 | 2 | ml/m2 | 2 | ml/m2 | 0 | ml/m2 | 0 | ml/m2 | 1 |
| HTINDEX | Index based on height | ml/cm | 2 | ml/cm | 2 | ml/cm | 0 | ml/m | 2 | ml/cm | 2 |
| CINDEX | Cardiac output indexed on body surface area | l/min/m2 | 2 | l/min/m2 | 2 | l/min/m2 | 1 | l/min/m2 | 1 | l/min/m2 | 2 |
| FLOW_RATE | Flow rate | ml/s | 2 | ml/s | 2 | ml/s | 0 | ml/s | 2 | ml/s | 2 |

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|-----------|------------------|-------|---|-------|---|-------|---|-------|---|-------|---|
| NONE | None | | 2 | | 2 | | 0 | | 2 | | 2 |
| DIAMINDEX | Diameter indexed | mm/m2 | 2 | cm/m2 | 2 | mm/m2 | 0 | mm/m2 | 2 | mm/m2 | 2 |
| ANGLE | Angle | deg | 1 | deg | 1 | deg | 0 | deg | 1 | deg | 1 |

| Dimension | Dimension | Small Animals (mm, cm/s, 10th) | | Small Animals (mm, cm/s, 100th) | | Small Animals (mm, m/s, 10th) | | Small Animals (mm, m/s, 100th) | | Small Animals (cm, m/s, 10th) | | Small Animals (cm, m/s, 100th) | |
|-------------------|---|--------------------------------|-----------|---------------------------------|-----------|-------------------------------|-----------|--------------------------------|-----------|-------------------------------|-----------|--------------------------------|-----------|
| | | Units | Precision | Units | Precision | Units | Precision | Units | Precision | Units | Precision | Units | Precision |
| DISTANCE | Distance | mm | 1 | mm | 2 | mm | 1 | mm | 2 | cm | 1 | cm | 2 |
| DISTANCE_MED | Medium distance | mm | 1 | mm | 2 | mm | 1 | mm | 2 | cm | 1 | cm | 2 |
| DISTANCE_LARGE | Large distance | mm | 1 | mm | 2 | mm | 1 | mm | 2 | cm | 1 | cm | 2 |
| AREA | Area | cm2 | 2 | cm2 | 2 | cm2 | 2 | cm2 | 2 | cm2 | 2 | cm2 | 2 |
| VOLUME | Volume in ml | ml | 1 | ml | 1 | ml | 1 | ml | 1 | ml | 1 | ml | 1 |
| VOLUME_CM3 | Volume in cm3 | cm3 | 2 | cm3 | 2 | cm3 | 2 | cm3 | 2 | cm3 | 2 | cm3 | 2 |
| VOLUME_PER_TIME | Volume per time | l/min | 3 | l/min | 3 | l/min | 3 | l/min | 3 | l/min | 3 | l/min | 3 |
| CURVE | Curve | mm | 1 | mm | 1 | mm | 1 | mm | 1 | mm | 1 | mm | 1 |
| PERCENT | Percent | % | 2 | % | 2 | % | 2 | % | 2 | % | 2 | % | 2 |
| VELOCITY | Velocity | cm/s | 1 | cm/s | 2 | m/s | 1 | m/s | 2 | m/s | 1 | m/s | 2 |
| VELOCITY_MM | Velocity in mm | cm/s | 1 | cm/s | 2 | m/s | 1 | m/s | 2 | m/s | 1 | m/s | 2 |
| VELOCITY_CM | Velocity in cm | cm/s | 1 | cm/s | 2 | m/s | 1 | m/s | 2 | m/s | 1 | m/s | 2 |
| VELOCITY_CM_PREC2 | Velocity in cm with Precision 2 | cm/s | 1 | cm/s | 2 | m/s | 1 | m/s | 2 | m/s | 1 | m/s | 2 |
| PRESSURE | Calculated pressure | mm[Hg] | 1 | mm[Hg] | 1 | mm[Hg] | 1 | mm[Hg] | 1 | mm[Hg] | 1 | mm[Hg] | 1 |
| PRESSURE_PER_TIME | Pressure per time | mm[Hg]/s | 2 | mm[Hg]/s | 2 | mm[Hg]/s | 2 | mm[Hg]/s | 2 | mm[Hg]/s | 2 | mm[Hg]/s | 2 |
| ACCELERATION | Acceleration | m/s2 | 2 | m/s2 | 2 | m/s2 | 2 | m/s2 | 2 | m/s2 | 2 | m/s2 | 2 |
| HEIGHT | Height | m | 2 | m | 2 | m | 2 | m | 2 | m | 2 | m | 2 |
| SINDEX | Index based on body surface area | ml/m2 | 1 | ml/m2 | 1 | ml/m2 | 1 | ml/m2 | 1 | ml/m2 | 1 | ml/m2 | 1 |
| HTINDEX | Index based on height | ml/cm | 2 | ml/cm | 2 | ml/cm | 2 | ml/cm | 2 | ml/cm | 2 | ml/cm | 2 |
| CINDEX | Cardiac output indexed on body surface area | l/min/m2 | 2 | l/min/m2 | 2 | l/min/m2 | 2 | l/min/m2 | 2 | l/min/m2 | 2 | l/min/m2 | 2 |
| FLOW_RATE | Flow rate | ml/s | 2 | ml/s | 2 | ml/s | 2 | ml/s | 2 | ml/s | 2 | ml/s | 2 |

Release Notes
TTA2.42.00

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|-----------|------------------|-------|---|-------|---|-------|---|-------|---|-------|---|
| NONE | None | | 2 | | 2 | | 2 | | 2 | | 2 |
| DIAMINDEX | Diameter indexed | mm/m2 | 2 | mm/m2 | 2 | mm/m2 | 2 | mm/m2 | 2 | mm/m2 | 2 |
| ANGLE | Angle | deg | 1 | deg | 1 | deg | 1 | deg | 1 | deg | 1 |