

TEM Server 6.15.2

(BioQuantum-K3 embedding)
Service Release Notes

PN 306699

Revision A • 18-Jul-19

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1 Introduction

TEM 6.15.2 is a TEM Server software version. It is released for a selection of Thermo Scientific and FEI systems as the following microscope software version:

- Titan 2.15.2
- Talos is not supported by TEM 6.15.2

This document describes the changes and improvements made with respect to the previous release, TEM 6.14.1.

Note **TEM 6.15.2 only supports Titan family systems with a Gatan BioQuantum 1967 filter with K3 camera:**

- **(Titan) Krios**
- **Titan Halo**

Note **TEM 6.15.2 is not the successor of TEM 6.15.1**

- TEM 6.15.0 is the initial release to the factory.
- TEM 6.15.1 is based on TEM 6.15.0.
This is the release for the upgrade of factory systems with TEM 6.15.0, and for the field upgrade of installed base systems. This includes systems with a Gatan BioQuantum 967 or 968 with K2 camera.
It contains a collection of fixes for issues that were found during tests in the factory.
- TEM 6.15.2 is also based on TEM 6.15.0, (not on TEM 6.15.1).
This is a dedicated release for the field upgrade of Cryo-EM systems at customers with a Gatan BioQuantum 1967 filter with K3 camera.
On top of all features and functionalities in TEM 6.15.0, TEM 6.15.2 contains new functionality and performance improvements to embed the Gatan BioQuantum 1967 filter with K3 camera.
This means that:
 - TEM 6.15.2 is tested and released only for Cryo-EM systems with a Gatan BioQuantum 1967 filter with K3 camera.
All other system configurations are not supported by TEM 6.15.2.
 - Not all fixes that are included in TEM 6.15.1 are also present in TEM 6.15.2.

This document is intended for Thermo Fisher Scientific service and factory engineers only. The latest version of this and other documentation can be found on the TEM Service CD.

1.1 Mandatory and Breaking Changes

None since the previous release.

1.2 Highlights

This TEM Server release introduces the following major features and improvements:

- Aberration Free Image Shift (AFIS) for Titan Krios systems.
- Ceta-D camera.
- Automatic Cryo-cycle for systems with an Autoloader.
- Fast Embedding for the Gatan BioQuantum Filter 1967 with K3 camera.

1.3 Supported Microscope Types

Note TEM 6.15.2 only supports Titan family systems with a Gatan BioQuantum 1967 filter with K3 camera.

Family	Type	Supported	Remarks
Titan	Titan (all)	No	
	Themis Z/S	No	
	Krios	Yes	
	Metrios	No	
	ETEM	No	
	Halo	Yes	
Talos	F200X/C/S/i	No	
	L120C	No	
	Arctica	No	
	Glacios	No	
Tecnai	All	No	

Note Verify that all microscope hardware is supported before installation of this TEM Server release.

Refer to Supported Hardware on page 9 for a list of supported modules and subsystems.

Note This TEM Server release does not support the direct upgrade from Windows XP based Titan 1.X software. To upgrade from Titan 1.X, please submit an NSR.

[105960 - Titan Software Upgrade to Windows 7](#)

1.4 Supported Software

The tables below specify the minimum compatible versions for various software applications surrounding the microscope and its use. The *Upgrade* column shows the necessity for upgrading to the specified version.

Upgrade	Explanation
Mandatory	The application <i>must</i> be upgraded to maintain system functionality and/or performance. If the application is not present on the system, then it is not necessary to install it.
Automatic	The application upgrade is included in the TEM Server installation.
Optional	The application <i>can</i> be upgraded, this is not required for system functionality or performance.
No change	There is no new application version.
Uninstall	The application must be removed.
N/A	The application does not support, or is not supported by this TEM Server release.

Future releases of the software applications may be backward compatible with a limited range of recent TEM Server releases. Refer to the release notes of these software applications for a specification of the supported TEM Server releases.

1.4.1 Microscope PC

On the Microscope PC, a Windows 7 Professional operating system image must be installed. Microscope PCs that are installed before 2015 may run on a Windows 7 Ultimate operating system. It is *not* necessary to replace the Windows PC image by a Windows Professional version.

To order a replacement Microscope PC for Titan and Talos systems, order the following FRU: [105334 - PC W7 IMBA RACK](#)

Note **TEM 6.15.2 uses a *different* GMS release than TEM 6.15.1**

SW Product	Version	Upgrade	Remarks
Tomography	4.11	Mandatory	
EPU	2.4	Mandatory	
MAPS	3.8	Mandatory	
Velox	2.8	Mandatory	
TIA	4.23	Automatic	Included in Titan and Talos SW installation. There will be no new features in TIA anymore, only bugfixes.
GMS	3.3.1.2360	Mandatory	<ul style="list-style-type: none"> This not the same version as for TEM 6.15.1 This version must be installed on the Microscope PC and on the Gatan PC.
Bruker Esprit	1.9.4.2	No change	Required for Super-X G1
Bruker Esprit	2.1.2.17921	No change	Required for Dual-X
Sherpa	1.12	Automatic	Included in Titan and Talos SW installation
AutoCTF	N/A	Uninstall	AutoCTF functionality is integrated in Sherpa. AutoCTF software <i>must</i> be uninstalled.
CEOS	4.6.9	Automatic	Included in Titan SW installation when configured with corrector(s)
Metrios UI	N/A	N/A	Metrios skips the TEM 6.15 release
Quadera Software	4.6.2	No change	ETEM only
RAPID	3.3.1	Optional	Older releases may still work also.
Imaging Codec Pack	3.12.0	Optional	

Service Tools

Note The mentioned software versions are the minimum version numbers for this TEM Server release. Service Tools are often backward compatible with limited range of preceding TEM Server releases.

SW Product	Version	Remarks
AutoAlignments Tip	1.2.14	Check TEM SW Archive - Auto Alignments - Tip Replacement for latest update
SQT	1.2.003	
Alignment Checker	1.4.4	Not available for FSEs Check TEM SW Archive - Alignment Checker for latest update.

1.4.2 Support PC

On the Support PC, a Windows 7 Professional operating system image must be installed.

Support PCs that are installed before 2015 may run on a Windows 7 Ultimate operating system. It is *not* necessary to replace the Windows PC image by a Windows Professional version.

SW Product	Version	Upgrade	Remarks
RAPID	3.3.1	Optional	Older releases may still work also.
Email Service and Port Forwarder	-	Mandatory	Install from Titan/Talos ISO
Imaging Codec Pack	3.12.0	Optional	

1.4.3 Remote Operation PC

SW Product	Version	Upgrade	Remarks
RAPID	3.3.1	Optional	Older releases may still work also.
TARO Simple	-	Mandatory	Install from Titan/Talos ISO
Imaging Codec Pack	3.12.0	Optional	

1.4.4 Other PCs

SW Product	Version	Upgrade	Remarks
TIA Offline	4.23	Optional	TIA Offline is backward compatible. There are no new features in TIA since 4.22. The upgrade to 4.23 is optional, but recommended.
Velox Offline	2.8	Mandatory	Velox Offline is backward compatible
Imaging Codec Pack	3.12.0	Optional	
Inspect3D	Upgrade depends on compatibility with Tomography data		
Amira / Avizo	Upgrade depends on compatibility with Inspect3D data		

1.5 Supported Hardware

Functionality	Hardware	Remarks
Communication		
CAN controller	CCB	
	SCU / SCU+UIOB	

Functionality	Hardware	Remarks
	SCU2	Only on Talos Family systems
Motion		
Compustage Mk1 / Mk2	SMCB	
	TSC	
Piezo enhancement	PI E545 and PI E727 controller	
Autoloader	Plan 1, 2 and 3 with NYCe 4000 controller	
	Plan 3 with Two Axis Controller (TAC)	
Apertures	AAM-G1 with NYCe4000 controller	
	AAM-G2 with TAC	
	Heated Apertures	Only with AAM-G2
IVIS		
Detectors and Imaging		
EDS	SuperX G1	Requires Esprit 1.9
	SuperX-G2 / G2 Lite	Requires Velox
	Dual-X	Requires Esprit 2.1
STEM Detectors	HAADF	
	BF/DF Retractable	
	BF/DF Retractable Mk2	
	BF-S/DF-S	Also known as NG-STEM
	Gatan 805, 807, BF/DF	
Scan Engines	PIA, PIA EDS	
	DigiScan	
	CAB/A	
	NanoMEGAS	
Cameras	Flucam 1 / 2	
	Falcon 2	Not supported by EPU 2.X
	Falcon III	

Functionality	Hardware	Remarks
	Ceta 16M	Also known as Ceta-1
	Ceta-D	
	Ceta Speed Upgrade	Also known as Ceta-2
	Gatan US1000XP	
	Gatan US1000, US4000	
	Gatan Orius SC200, SC1000	
	Gatan OneView	
Filters	Gatan Quantum 963 / 964 / 965 / 966 / 967 / 968	Use TEM 6.15.1 software
	Gatan Enfinium SE/ER	Use TEM 6.15.1 software
	Gatan BioQuantum 967 / 968 with K2 camera	Use TEM 6.15.1 software
	Gatan BioQuantum 1967 with K3 camera	Use TEM 6.15.2 software
Vacuum/High Tension		
IGPD2 power supply	IGPD2v2	
	IGPCU 5KV / 5.5KV	
HT Tank	Gen. 1	
	Gen. 2	
	Gen. 2.3	Only for Talos
FEG Accelerator	Gen. 1	
	Gen. 2	

1.6 Discontinued Hardware

None since the previous release.

2 Source and High Tension

2.1 New Features

No (major) items.

2.2 Improvements

No (major) items.

2.3 Impact on Service / Install

No (major) items.

3 Vacuum

3.1 New Features

No (major) items.

3.2 Improvements

No (major) items.

3.3 Impact on Service / Install

Titan

- The **Vacuum Test** dialog > **TMP** tooltip is extended with detailed status information.

4 Optics

4.1 New Features

Titan

- **Sherpa AutoCTF:**
A Presets button is added. The Presets function sets the microscope to the same alignment conditions as Sherpa APM uses for Coma Correction and Objective Stigmation.
- Lens series and Camera Lengths for Micro-ED (MED) are introduced on all Krios systems and all Talos systems, except Talos L120.

- Aberration Free Image Shift (AFIS) is available on Krios systems. AFIS enables EPU to achieve a higher throughput.
The AFIS calibration must be done by a Thermo Fisher Scientific engineer.
- Sherpa APM:
Support for AFIS is added.

4.2 Improvements

Titan

- Sherpa APM:
 - The Coma Correction and Stigmatism actions start with a reset of the Image Beam Shift.
 - Presets and Sequence actions are adjusted to support Aberration Free Image Shift (AFIS).
 - The speed and accuracy of the Objective aperture alignment are improved.
 - The results of the following actions are now also displayed in the Logging panel:
 - Coma measurement
 - Coma correction
 - Defocus / astigmatism measurement
 - Astigmatism correction
- Sherpa AutoCTF:
 - The number of azimuth angles for coma measurement is configurable in the AutoCTF settings file.
 - For new systems on which no software versions prior to TEM Server 6.15.X have been installed, the default **Autofocus to** value is -2 μm instead of -5 μm
 - The speed and accuracy of the Objective aperture alignment are improved.

4.3 Impact on Service / Install

Titan

- Aberration Free Image Shift (AFIS) is available on Krios systems.
The AFIS calibration must be done after the TEM Server upgrade is installed. After the AFIS calibration is completed, the APM Alignment Set must be updated to include the AFIS alignment settings.

5 Cameras and Detectors

5.1 New Features

Titan

- Fast embedding for the Gatan BioQuantum 1967 with K3 camera.
 - Improved stability and improved throughput for faster data acquisition with EPU.
 - New GMS version 3.3.1.2360.
 - TIA has limited support for Gatan K3 cameras.
- Ceta-D is now available.
- Ceta Sensor Packages are no longer rejected due to *weak lines*.
A weak line is an artefact that is caused by an adjacent line defect. A line defect can cause an adjacent line to appear with a small contrast deviation. A weak line is not a defect itself.
- STEM: Auto Contrast Brightness (Auto Gain/Offset) for all STEM detectors.
- 4D STEM with EMPAD detector:
Communication interface between EMPAD3+ PC and TEM Server on Microscope PC.

5.2 Improvements

Titan

- For Ceta cameras, a water leak risk warning is given if the camera is not warmed up before the water flow is stopped, for example when the CSU is powered down.
- BF-S / DF-S:
 - Improved BDFA calibration.
 - BDFA must now be at working temperature (55 °C) for calibration.
- To prevent an issue on microscopes with a NanoMEGAS scan engine, the nightly FluCam restart is disabled.
This may result in a 'stuttering' FluCam performance after 10 days or longer of intensive FluCam usage. If the FluCam starts stuttering, stop and start the Microscope software and TEM Server.

5.3 Impact on Service / Install

Titan and Talos

- The linearization procedure is adjusted for Ceta sensors with weak lines. A line defect in a sensor can cause a neighboring line to appear with a small contrast deviation. This is called a 'weak line'. A weak line is an artefact, it is not a defect itself. The adjusted linearization procedure prevents that sensors are unnecessarily rejected due to weak line artefacts.
- From this TEM Server release on, TIA is in maintenance mode. Major issues will still be solved, but there will be no new features added in TIA anymore.
- The following Unique Error Codes (UECs) are added:

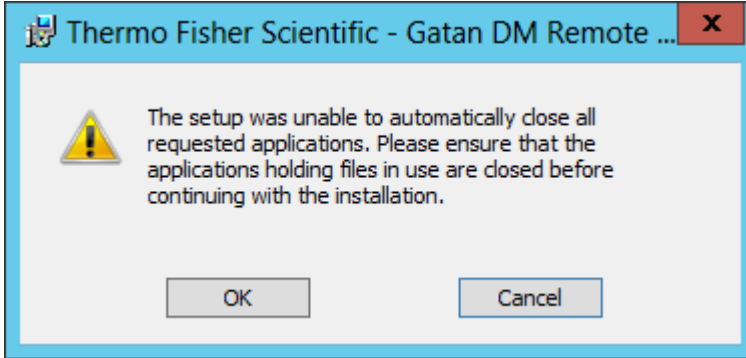
UEC_ SUBSYSTEM	UEC_ DEVICES	DEV_ INSTANCES	DEV_ ERROR_CODES
CAMERA (33)	... (65)	... (44)	ERR_FROZEN_COOLING_SYSTEM

5.3.1 GMS Upgrade Instructions for TEM Server 6.15.2

The instructions below will be included in a Work Instruction for embedding the Gatan BioQuantum 1967 filter with K3 camera.

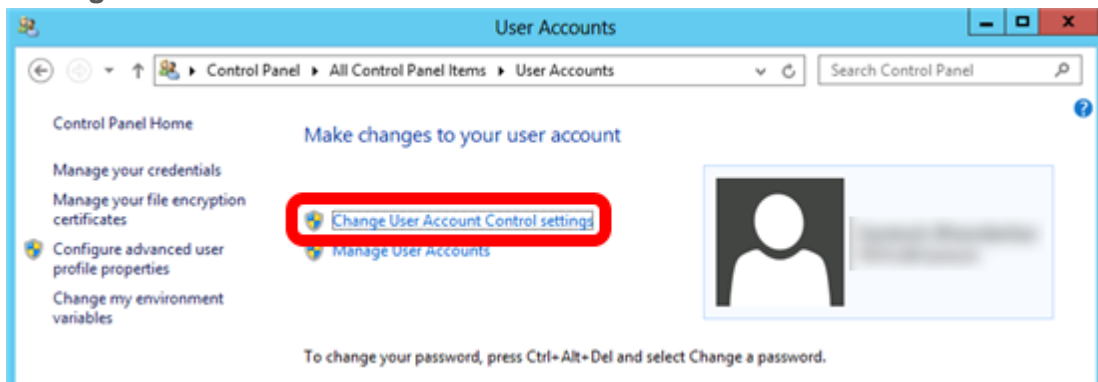
1. On the Microscope PC:
 - a. Uninstall the **current GMS version**.
 - b. Install the **new GMS version**.

2. On the Gatan PC:
 - a. Kill the `GatanRpcServer.exe` process on the Gatan PC.
 - b. Install the **new GMS version**.
If the following error appears during installation of the new GMS version, select **OK**.

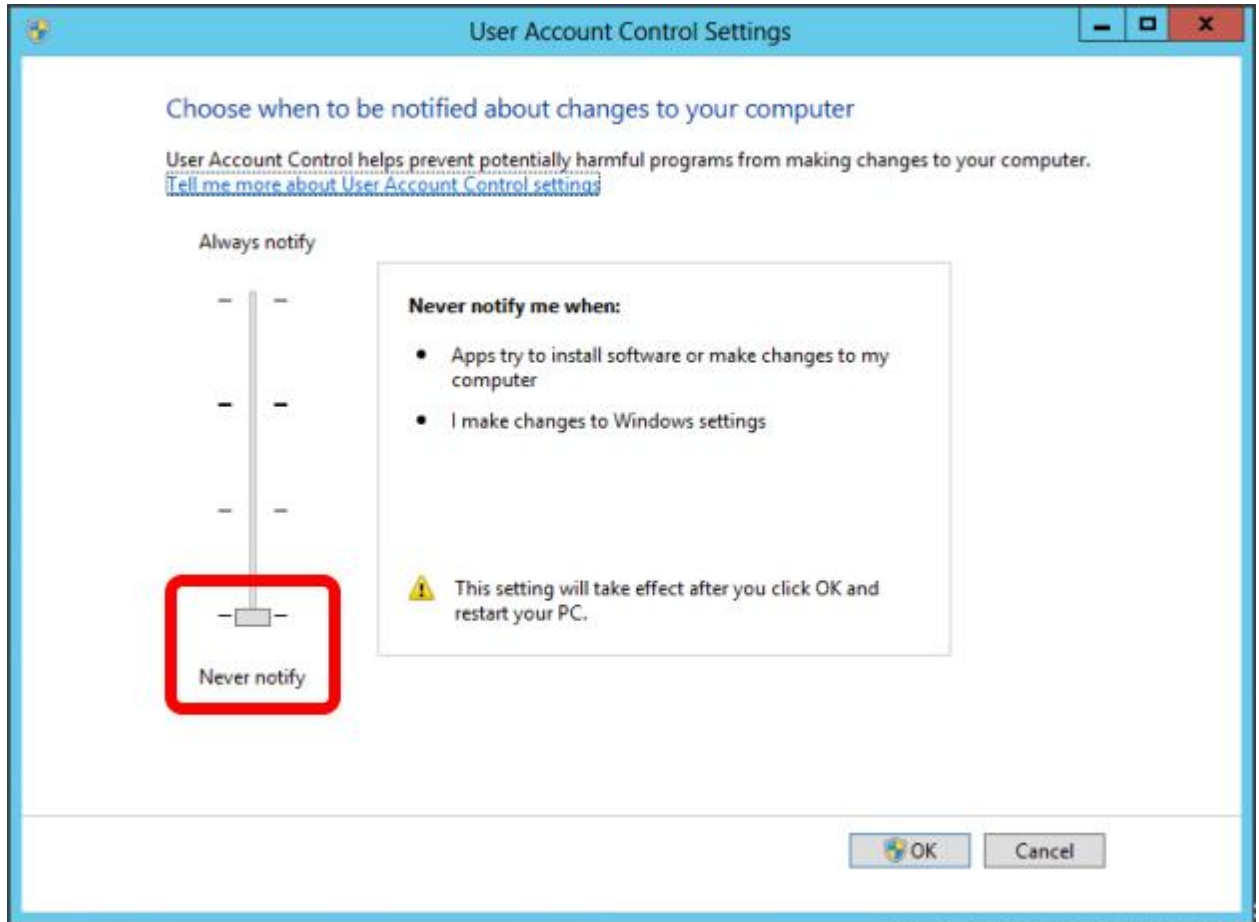


The software installation will not be compromised.

- c. Open the **Control Panel** > select **User Accounts** > select **User Account Control Settings**



d. Select **Never notify**



e. Reboot the **Gatan PC**.

3. After the GMS upgrade on the Microscope PC and the Gatan PC is completed, acquire new **Dark and Gain Reference images**.

6 Motion

6.1 New Features

Titan

- The Firmware Checker now also verifies the firmware versions of the following motion controllers:
 - Twin Axes Controller (TAC) on AAM-G2 and the AutoLoader.
 - TEM Stage Controller (TSC) for CompuStage Mk1 and Mk2.
 - IVIS controller

The Firmware Checker does *not* verify the firmware versions of the following motion controllers:

- PI E-545 and E-727 controllers of the Compustage Piezo Enhancement.
The PI controllers are included in the automatic firmware update during the TEM Server installation.
- NYCe4000 controller for the AAM-G1 aperture mechanisms and AutoLoader.
The NYCe4000 controller is not included in the automatic firmware update during the TEM Server installation. If new firmware is available this must be installed manually.

6.2 Improvements

No (major) items.

6.3 Impact on Service / Install

Note **On a small number of TSC boards with known serial numbers, the firmware update will fail without notification. On a system with one of these TSC boards, the Compustage can not be enabled after the TEM Server is upgraded. Check Known Issue [306701](#) for the serial numbers of the involved TSC boards.**

Titan

- Holders:
 - In the Software Configurator, the Holders are now listed on a new separate page.
- Firmware updates for the following motion controllers:
 - Bosch-Rexroth NYCe4000 (AAM-G1 and AutoLoader)
The firmware must be updated manually after TEM Server 6.15 is installed.
 - Prodrive TSC (Compustage) and TAC (AAM-G2 and AutoLoader)
The firmware is updated automatically during the TEM Server installation.

7 Autoloader

7.1 New Features

Titan

In *Temperature Control* a new *Automatic Cryocycle* behavior is added to handle rising temperatures of the *AutoLoader Docker* and/or *Sample Holder* when an ongoing *Autofilling* routine fails.

Conditions	Event	Automatic Response
<ul style="list-style-type: none"> State is <i>All nitrogen</i> Dewar levels are below 5% An <i>Autofilling</i> routine is ongoing Dewar levels are <i>not</i> rising These conditions trigger an error and <i>Temperature Control</i> goes into an <i>Error</i> state.	The <i>AutoLoader Docker</i> temperature rises above 123K	Temperature Control: <ul style="list-style-type: none"> Recovers from the <i>Error</i> state. Starts conditioning the <i>AutoLoader</i>.
	The <i>Sample Holder</i> temperature rises above 123K	Temperature Control: <ul style="list-style-type: none"> Recovers from the <i>Error</i> state. Starts conditioning the <i>column</i>.
	Both the <i>AutoLoader Docker</i> and <i>Sample Holder</i> temperature rise above 123K	Temperature Control: <ul style="list-style-type: none"> Recovers from the <i>Error</i> state. Starts conditioning both the <i>AutoLoader</i> and the <i>column</i>. After <i>AutoLoader</i> and the <i>column</i> have reached the conditioning state, go to <i>All room temperature</i> state.

To manually override the automatic response, select the desired state in **TEM User Interface > Temperature Control** control panel > **Temperature State: Go to:**

The manual override remains active until the dewar levels have reached 5% or higher.

7.2 Improvements

No (major) items.

7.3 Impact on Service / Install

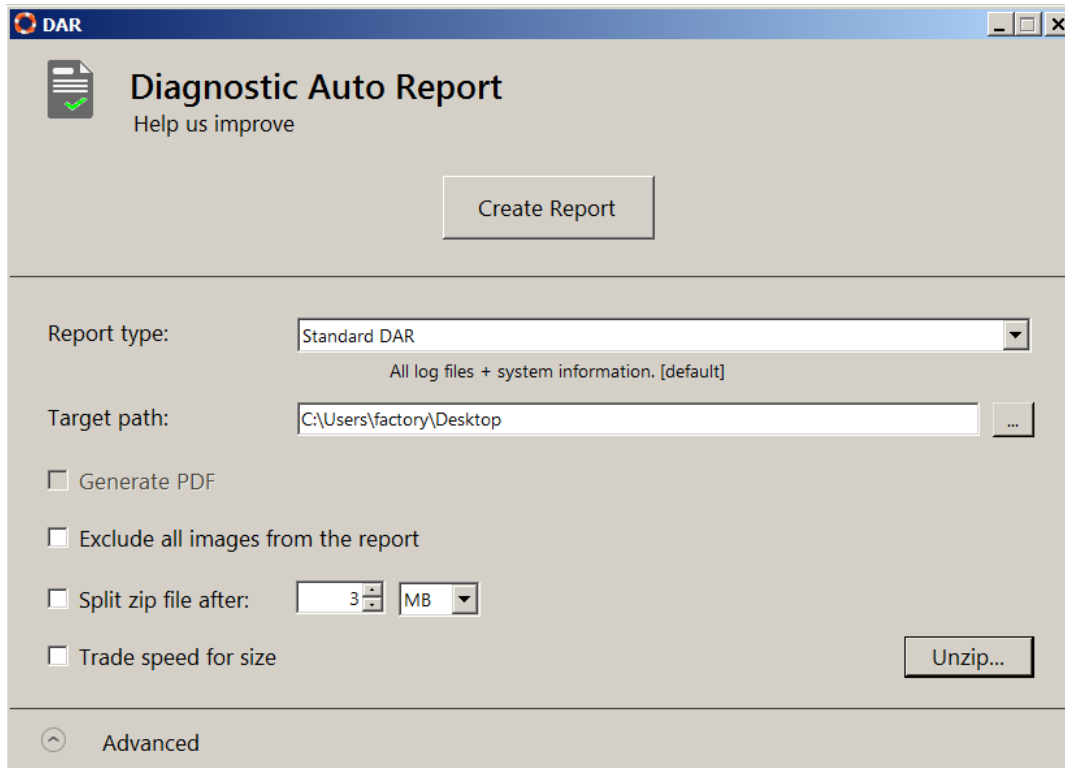
No (major) items.

8 TAD, Service Tools, Installer and Licensing

8.1 New Features

Titan

The DAR tool is replaced by a new version. The new DAR tool has better performance (faster and smaller files).



Select **Advanced** to access the following features:

- **Report type**

Specify the contents of the DAR zip file:

- Standard DAR: system information and log files for Thermo Scientific software.
- Extended: Standard DAR, plus the 3 most recent crashdumps.
- Full: Standard DAR, plus the 10 most recent crashdumps.

The default report type is *Standard DAR*.

- **Target path**

Specify the location where the new DAR zip file is stored.

The default path is the `C:\Users\[username]\Desktop` folder.

Note **To save disk space on the Microscope PC, it is highly recommended to select a folder on the Support PC.**

- Do *not* use the **Generate PDF**, **Exclude all images from the report**, **Split zip file after** and **Trade speed for size** options. Also do *not* use the **Unzip** function. These options will be removed in a later version of the Diagnostic Auto Report tool.

The DAR tool is available at **Microscope Software Launcher > Tools > Diagnostic Auto Report Tool**

The previous DAR tool is still available at
C:\[Titan or Tecnai]\Infra\DiagAutoReport.exe

8.2 Improvements

No (major) items.

8.3 Impact on Service / Install

Titan

- The following items are removed from the Applications ISO:
 - Fiji Image J application and installer
 - PRO2KXP driver for desktop boards in Windows XP
 - Bergson Licensing
- New Data Services software with new Data Services prerequisites. These prerequisites are included in the mandatory *Prerequisites* installation before the TEM Server software is installed.

9 NSR Support

No (major) items.

10 Solved Issues

Although this TEM Server version is *not* released for Talos systems. For generic issues that are not specific for only Titan systems, the table below still indicates if an issue would also apply to the Talos variant of the TEM Server software.

Solved in TEM 6.15.0

ID	Description	Titan	Talos
TT582782	STEM: 'Auto C/B' sets contrast/brightness for ALL inserted detectors	X	X
TT588067	CAPP averager result depends on exposure time	X	X
TT665873	Crash in HalMotionProdriveV3 when server stop during HoldPosition	X	X
TT671266	SensorChecker version number logging not correct; 2.1.8.6. is reported as .6	X	X
TT702742	Incorrect version shown while firmware update is ongoing	X	X
TT704088	Autoloader Temperature control: auto cryocycle when column dewar is empty	X	X
TT710718	SMASH (CAB/A): Scan does not start	X	X
TT732170	Server Crash(FEIdbox) when running Metrios Recipe	X	X
TT743379	Timeout in TBCA firmware during acquisition data transmission (known issue in 6.14)	X	X
TT751556	SpectrumCollection - Spectrum image doesn't work at all	X	X
766423	CAPP: Support aborting an acquisition	X	X
TT769188	PySide wheel currently used by AutoStar gives issues with PyQtGraph	X	X
TT769357	EELS acquisition shows error message: camera task already running	X	X
TT774677	Compustage calibration tool - EPD Change	X	X
TT775908	CCU2 firmware update utility	X	X
TT775942	Problem in phaseplate alignment due to restore of Autozoom setting	X	X
TT777185	Acda crash EdxStopCriterion	X	X
TT777966	CPI: DHCP message does not contain mandatory 'Message Type' option	X	X
TT780174	EPU stopped after DigitalMicrograph software crashed	X	X
TT780533	ACDA Crash CameraFalconEC.exe	X	X

ID	Description	Titan	Talos
TT782301	Metrios PC full PC hangup	X	
TT782576	Camera problem solver does not detect configuration change	X	X
TT783493	EPU: Error calling Storage Server: System.Runtime.InteropServices.COMException	X	X
TT784247	Wrong logo used for Falcon service tool	X	X
TT785154	Empad fails during deinstall (non-Empad config)	X	
TT785607	Camera service tools do not show full sensor serial number	X	X
TT786281	Optics NSR option HolographyTransferLens does not work	X	
TT786529	MSL: icons of camera tools incorrect	X	X
TT786632	Crash in mdloptics_titan	X	
TT786807	Crash in CameraFalconEC.exe during smoketest (ACDA)	X	X
TT787229	Acda crash CameraCeta2.exe	X	X
TT787261	GMS crashes after Titan 2.12 upgrade	X	X
TT787285	Ceta Reference Image Manager: please change the icon	X	X
TT787294	Unexpected camera port connection(s) found. Expected: 01234567, Actual: 01230123	X	X
TT787554	4DSTEM: ROI pos. Offset is not revised and makes app crash with invalid values	X	X
TT787956	Reduce third octave spectrum logging for iVIS	X	X
TT788883	Change condenserzoom steps in LifeScience alignment as asked for by Goettingen	X	
TT789467	The handling of hardware errors in MdlOptics should be improved	X	
TT789642	Crash in TEM Server FeiBBox.exe	X	
TT789663	ACDA Crash CameraFalconEC.exe CriticalSection::TryEnter	X	X
TT792717	6.14RC3 crashes after connection loss with STEM detectors	X	X
TT793346	iVIS shows wrong TAD help file version	X	X

ID	Description	Titan	Talos
TT793665	in TAD of acquisition server the name SMASH is mentioned	X	X
TT793915	No acquisition possible after exception	X	X
TT795003	Wrong position of variable C3-aperture in the smartoptics registry gives 10% conv angle deviation	X	
TT795826	AcqMon: Cannot open CameraTask: Exception: Value cannot be null.	X	X
TT795900	AcqMon: CameraTask does not scale up after selecting camera and is unusable	X	X
TT795916	While changing Magnification a step during continuous STEM acquisition hangup	X	X
TT796314	Crash in tstmdoptics.exe	X	
TT797576	Feibbox crash on Talos Alpha3 (e_bhvCcdRAM_Eighth)	X	X
TT798996	Reproducible crash when single Ceta acq is followed by ROI change	X	X
TT800228	C2;F3: "Cable::RuntimeError: Processing is already being waited" during acquis..	X	X
TT804880	Smoke acq fails due to crash in CameraCeta.exe	X	X
TT804984	Crash in MdlApertures	X	X
TT805311	Wrong convergence angle in UI-bar for monospots when changing C3-aperture	X	
TT805671	Not possible to set Spot Size lower than 5		X
TT807223	Camera cooling status in peoui not updated	X	X
TT807287	Dose protector "Not available (recoverable)"	X	X
TT807578	Counts to electrons multiplication factor is not correct	X	X
TT807754	Camera emulator selected as default source while sensor is required	X	X

Solved in TEM 6.15.2

ID	Description	Titan	Talos
TT821054	AFIS alignment - No images shown in Sherpa	X	X
TT823157	Ceta D Acquisition Patch for 6.15	X	X
TT824783	Auto-Objective aperture centering in APM not working in EFTEM mode	X	X
TT830539	TEM server crash due to unhandled exception in event invocation	X	X

Note **TEM 6.15.2 is *not* the successor of TEM 6.15.1**
The solutions for the issues in the table above may not all be present in TEM 6.15.1.

TEM 6.15.1 and TEM 6.15.2 are parallel releases that are both based on TEM 6.15.0. For the solved issues in TEM 6.15.1, refer to the Release Notes for TEM 6.15.1.

11 Known Issues

Known issues can be found on the Service CD.

All released software versions have a link to a Known Issues list in the top-level software overview document.

Although this TEM Server version is *not* released for Talos systems. For generic issues that are not specific for only Titan systems, the table below still indicates if an issue would also apply to the Talos variant of the TEM Server software.

ID	Description	Titan	Talos	Remarks
???	STEM Descan can produce sub-optimal results	X	X	
???	IGPD device validation always succeeds with warning	X	X	Issue with old FW update
TT652982	FeiAutoStarServer.exe server still running, after Sherpa and TEM server stopped	X	X	
TT681338	SuperX G1 / Dual-X: Disconnect/connect loop	X	X	
TT683944	Not possible to run camera "search" in TIA	X	X	
TT696179	Escalation EU69585 TIA is closing by itself. Sometimes even right after start up	X	X	
TT704034	TemServiceAccess doesn't start for Salve NSR config	X		
TT713626	SuperX G2 peaks shift when countrates change	X	X	
TT715798	SpectrumCollection (Stem+CDD) is not started	X	X	
TT717387	SuperX G2 deadtimes at low count rates are not correct during acquisition	X	X	
TT717382	SuperX G2 deadtimes don't match between idle and active acquisition	X	X	
TT718847	Correct Objective Stigmator gives HRESULT 80004005	X		
TT725645	Find Beam" routine: in TEM mode (3-condenser mode) does not work properly	X		
TT727500	Incorrect metadata while acquiring STEM-EDS	X	X	
TT733615	AutoCTF is very slow and irresponsive	X		

ID	Description	Titan	Talos	Remarks
TT736864	Find Beam button in Monochromator (Expert) OCX does not function	X	X	Caused by Known Issue 652982
TT740184	STEM-EDX-EELS performance is lower for CAPP (NGSTEM) than for PIA	X	X	
TT741372	Countrate incorrect superX G2	X	X	
TT743008	Electronic noise for G1/Esprit is calibrated but not propagated.	X	X	
TT743009	Electronic noise for G2 is propagated but NOT calibrated.	X	X	
TT750071	OptiSTEM inserts HAADF in TEM mode	X	X	
TT751977	Inconsistent (incomplete) error messages when no camera present	X	X	
TT751980	AutoCTF fails when starting at a too high defocus	X	X	
TT754769	TEM server installation aborted at CEOS SW installation step	X		Mitigation: Work Instruction
TT758268	Crash in iomacquisition	X	X	
TT759907	Strange failure mode of NG STEM in case of low dwell times	X	X	
TT760558	Install aborted due to CEOS	X		Mitigation: Work Instruction
TT760647	Task cannot be stopped during image acquisition	X	X	
TT761235	Sluggishness on Themis after S-CORR upgrade	X		Mitigation: Work Instruction
TT762824	SuperXG2 response noise first 10 msec	X	X	

ID	Description	Titan	Talos	Remarks
TT767667	Find Beam in Monochromator (Expert) doesn't work (however Sherpa does work) STEM Auto Tuning functionality cannot be added to the Workset (Same root cause as 736864)	X	X	Caused by Known Issue 652982
TT769428	AutoCTF does not show phase plate activation graph when stopping measurement	X	X	
TT772811	Incorrect FFT fit reliable for AutoCTF	X	X	
TT775403	CETA shuts off cooling frequently	X	X	
TT779881	AutoCTF phase plate plot and microscope image occupy same UI space	X	X	
TT780231	STEM scanning is shifted during the first lines	X	X	
TT780477	AutoCTF hangs	X	X	
TT783178	DUAL-X detector insert via IOM blocks after count rate exception.	X	X	
TT784547	When camera is offline AutoStar TemService cannot be started	X	X	
TT785183	Preconditions Center Objective Aperture alignment ignored when no 100u aperture	X	X	
TT785186	No user feedback when missing 100u objective aperture in APM	X	X	
TT797565	Logviewer cannot open storageserver.log file	X	X	
TT793656	After TEM server restart the stem detectors do not initialize correctly.	X	X	
TT794929	NG-STEM - ScanTask Synchronization issue	X	X	

ID	Description	Titan	Talos	Remarks
TT801222	Sherpa hangs since CTF estimation algorithm cannot handle incorrect pixel sizes	X	X	
TT814781	FluCam may stutter after long intensive use on systems with NanoMEGAS	X	X	
TT818798	DAR under start is not working	X	X	
TT826178	6.15.1 fix for Ceta2 817261: Magcal signal to low	X	X	
TT829479	User interface freezes when pressing 'fill now'	X	X	
TT830648	C2 optics board goes into error state	X	X	
TT833768	First image after slit insert shows shading effect	X	X	
TT833775	Exception in Gatan remoting results in failing EPU acquisition	X	X	