

TEM Server 7.10

Service Release Notes

Revision 7.10.1 • 17-DEC-2021

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1 Introduction

TEM 7.10.X is a TEM Server software version. It is released for Thermo Scientific Transmission Electron Microscope (TEM) systems as the following microscope software versions:

- Titan 3.10.X for High End systems with a Titan column.
- Talos 2.10.X for Mid Range systems with a Talos column.

This document describes the changes and improvements made with respect to the previous release, TEM Server 7.9.1.

1.1 Mandatory and breaking changes

None since the previous release.

1.2 Highlights

Titan and Talos

The *Thermo Scientific Falcon 4i* camera is now supported on all systems that also support its predecessor, the Falcon 4 camera.

Talos

The first *Thermo Scientific Tundra* systems will be shipped as an NSR with TEM Server 7.10. These systems must be updated to TEM Server 7.11 at later time to convert to the regular product specifications for Tundra.

2 System, Software and Hardware Compatibility

2.1 Supported microscope types and software upgrades

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

Refer to [Supported hardware](#) on page 10 for a list of supported modules and subsystems.

2.1.1 Supported High End systems with Titan software

Series	System	Upgrade from Titan 2.X on Win7 (TEM Server 6.X)	Update from Titan 3.X on Win10 (TEM Server 7.X)
Titan	G1 80-300 G1 Cubed 80-300 G2 60-300 G2 80-200 G2 Cubed 80-300 ETEM ETEM G2 Krios Halo	Not available	Not applicable
	Themis 200 Themis 300 Cubed Themis 300 Themis G2 200 Themis G2 300 Cubed Themis G2 300	NSR	Regular procedure
Metrios	G1 L G2 DX G2	Not available	Not applicable
	DX G3	NSR	Regular procedure
	AX	Not applicable	Regular procedure
Themis	ETEM G3	Not available	Not applicable
	200 G3 300 G3 Z G3 Z G3.1 S G3	NSR	Regular procedure

Series	System	Upgrade from Titan 2.X on Win7 (TEM Server 6.X)	Update from Titan 3.X on Win10 (TEM Server 7.X)
Krios	G2 G3 G3i	NSR	Regular procedure
	G4 G4i	Not applicable	Regular procedure
Spectra	200 300 Ultra	Not applicable	Regular procedure

2.1.2 Supported Mid Range and Entry Level systems with Talos software

Series	System	Upgrade from Talos 1.X on Win7 (TEM Server 6.X)	Update from Talos 2.X on Win10 (TEM Server 7.X)
Talos	F200X F200S F200C L120C Arctica	Upgrade package from the full catalog possibly with upgrade NSR(s)	Regular procedure
	F200X G2 F200S G2 F200C G2 F200i L120C G2 Arctica G2	Upgrade package from the full catalog	Regular procedure
	F200X G2.1 F200S G2.1 F200C G2.1 F200i G1.1 F200E L120C G2.1 Arctica G2.1	Not applicable	Regular procedure
Glacios	7NC 1139918	Upgrade package from the full catalog	Regular procedure
	7NC 1149551	Not applicable	Regular procedure

Series	System	Upgrade from Talos 1.X on Win7 (TEM Server 6.X)	Update from Talos 2.X on Win10 (TEM Server 7.X)
Tundra	7NC 1253068	Not applicable	Regular procedure

2.1.3 Special attention points for systems with an NSR

If a system has one or more NSRs, then the installation of a software upgrade must be treated with the same caution and attention to detail as the initial delivery of the NSR(s).

Pay special attention to:

- System configuration:
 - See: [Supported hardware](#) on page 10 .
 - See: [Discontinued hardware](#) on page 16 .
- Non-standard software functionalities.
Verify that all non-standard functionalities are still supported.

2.2 Compatible software versions

Note This chapter specifies the *minimum* software versions that are compatible with this TEM Server release.

Newer software versions may be available that are backward compatible with this TEM Server release.

- Check [TEM SW Archive](#) for the most recent compatible software versions.
- Refer to the release notes of the listed software products for a specification of the supported TEM Server releases.

In the tables below, the *Upgrade* column specifies whether or not an upgrade is necessary.

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.

2.2.1 Microscope PC

The Microscope PC must run on the Windows 10 IOT Enterprise operating system.

Software	Version	Upgrade	Remarks
Tomography	5.8	Mandatory	Includes Tomography 4.20 for STEM and STEM/EDS experiments.
EPU	2.13	Mandatory	
EPU-D	1.9	Mandatory	
MAPS	3.19	Mandatory	
Velox	3.3	Mandatory	
Apollo	1.2.0	Automatic	Included in TEM Server 7.10.0 installation.
	1.3.0	Automatic	Included in TEM Server 7.10.1 installation.
TIA	5.10.0	Automatic	Included in TEM Server installation. There will be no new features in TIA anymore, only critical issues are solved.
GMS	3.4.4.3447	Mandatory	For TEM Server 7.10.0
	3.4.4.3448	Mandatory	For TEM Server 7.10.1
Bruker Esprit	2.2.1.4328	Mandatory	For Dual-X / Single-X
Sherpa	2.7	Automatic	Included in TEM Server installation.
CEOS	5.4.6	Automatic	<ul style="list-style-type: none"> • Included in Titan installation. Only for systems with corrector(s). • Requires Linux Kernel 7.10 on the Corrector PC.
Metrios UI	4.6	Mandatory	
Quadera Software	N/A	N/A	
RAPID	4.0.6	Mandatory	
Imaging Codec Pack	3.15.0	Automatic	Included in the Prerequisites installation.
Data Collector	3.6.0	Automatic	Included in TEM Server installation.

Service Tools

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

SW Product	Version	Remarks
AutoAlignments Tip	Uninstall	<ul style="list-style-type: none"> Replaced by <i>Sherpa > HT Conditioning</i>. The AutoAlignments Tip tool is <i>not</i> compatible with TEM Server 7.6.X and later.
Alignment Checker	1.4.6	<i>Not available for FSEs</i> Check TEM SW Archive - Alignment Checker for latest update.

2.2.2 Support PC and Network PC

The Support PC or Network PC must run on a Windows 10 operating system.

SW Product	Version	Upgrade	Remarks
RAPID	4.0.6	Mandatory	Older releases may still work also.
Email Service and Port Forwarder	-	Mandatory	Install from Titan/Talos ISO
Imaging Codec Pack	3.15.0	Optional	

2.2.3 Remote Operation PC

SW Product	Version	Upgrade	Remarks
RAPID	4.0.6	Mandatory	Older releases may still work also.
TARO Simple	-	Mandatory	Install from Titan/Talos ISO
Imaging Codec Pack	3.15.0	Optional	

2.2.4 Other PCs

SW Product	Version	Upgrade	Remarks
TIA Offline	5.10.0	Optional	TIA Offline is backward compatible. There are no new features in TIA since 4.22. The upgrade is optional, but recommended.
Velox Offline	3.3	Mandatory	Velox Offline is backward compatible.
Bruker Esprit Offline	2.2.1.4328	Mandatory	Same version as on the Microscope PC.
Imaging Codec Pack	3.15.0	Optional	
Inspect3D	Upgrade depends on compatibility with Tomography data		
Amira / Avizo	Upgrade depends on compatibility with Inspect3D data		

2.3 Supported hardware

Note Although the supported hardware list contains a limited selection of (legacy) hardware that is not available on new, factory-built systems, TEM 7.X software can *not* be retrofitted on all legacy systems.

Facilities, communication and infrastructure

Functionality	Hardware	Remarks
Microscope PC	HP Z4 G4	
CAN Controller	CCB	Only in the TEM Cabinet, not in the Optics Cabinet
	SCU	
	SCU2	
User I/O	OSD for Talos	
	OSD for Titan G4 and Themis S	
	Loading Area LEDs for Krios G4	
	KVM Extender	

Source and High Tension

Functionality	Hardware	Remarks
HT Tank	G1	
	G2	
	G2.3	
Gun	FEG G1	XFEG and SFEG, with and without Monochromator
	FEG G2	XFEG and SFEG, with and without Monochromator
	CFEG	
	Thermionic	LaB6 and Tungsten

Vacuum

Functionality	Hardware	Remarks
IGPD2 power supply	IGPv2	
	IGPCI	With cable interlock
	IGPCU 5KV / 5.5KV	

Optics

Functionality	Hardware	Remarks
Talos Optics Boards	Version 1	
Current Measuring Board	CMAG	
	CMIB	
Phase Plate	SCU Remote Controlled Heating	Keithley Power Supply (USB)
	PPHS Power Supply (Ethernet)	Type 1 and Type 2
Probe Corrector	DCORPLUS	
	SCOR	
Image Corrector	CETCORPLUS	<ul style="list-style-type: none"> • non-constant power • constant power
	CcCOR	

Cameras, filters and detectors

Functionality	Hardware	Remarks
Cameras	Flucam 2	
	Flucam 3	Also known as SmartCam
	Falcon 3EC	
	Falcon 4	
	Falcon 4i	
	Ceta (16M/-D/-M/-S/-F)	Including Ceta Speed Enhancement (Ceta-2)
	Gatan US1000XP	
	Gatan OneView	
Filters	Gatan Filters	See Support for Gatan Filters.
	Selectris	Only for Krios and Glacios
	Selectris X	Only for Krios and Glacios
STEM Detectors	HAADF	

Functionality	Hardware	Remarks
	BF/DF Retractable	
	BF/DF Retractable Mk2	
	Panther STEM BF-S/DF-S	Also known as NextGen- or NG-STEM.
EDS	Super-X G2 / G2 Lite	Requires Velox
	Dual-X / Single-X	Requires Esprit 2.2
	Ultra-X	
Scan Engines	PIA, PIA EDS	
	CAB/A	
	Gatan Digiscan II	
	Gatan Digiscan III	

Note All Gatan cameras and filters that are supported by the installed GMS version on the Gatan PC can (also) be installed in Stand-alone configuration.

Motion and specimen loaders

Functionality	Hardware	Remarks
CompuStage	Mk1	
	Mk2	
CompuStage Controller	SMCB	
	TSC	
Piezo Enhancement	PI E545	
	PI E727	
Automated Aperture System	AAM-G1	NYCe4000 motion controller
	AAM-G2	<ul style="list-style-type: none"> TAC controller Including Heated Apertures
Autoloader	Plan 1, 2, 3 with NYCe4000	
	Plan 3 with TAC	

Functionality	Hardware	Remarks
Semi-automated Loader		Only on Tundra systems
IVIS		

2.3.1 Compatible Gatan cameras and filters

Product name	Embedding name	Embedding type	License type
UltraScan US1000XP	BM-UltraScan	Local GatanRpcServer	High Perf.
OneView	BM-Oneview	Remote GatanRpcServer	High Perf.
Enfinium 967 / 977 SE / ER	ENFINIUM	Local GCI2	Basic
Quantum 963	EF-CCD	Local GCI2	Basic
Quantum 965	EF-CCD	Local GCI2	Basic
Quantum 966	EF-CCD	Local GCI2	Basic
BioQuantum 967	EF-CCD	Remote GatanRpcServer	High Perf.
BioQuantum 968	EF-CCD	Remote GatanRpcServer	High Perf.
BioQuantum 1967	EF-CCD	Remote GatanRpcServer	High Perf.
Continuum 1065 ER	EF-CCD	Remote GatanRpcServer	High Perf.
Continuum 1066 HR	EF-CCD	Remote GatanRpcServer	High Perf.
Continuum 1077 S	ENFINIUM	Remote GCI2	Basic
Continuum 1069 K3	EF-CCD	Remote GatanRpcServer	High Perf.
Continuum 1069 K3 Dual	EF-K3	Remote GatanRpcServer	High Perf.
	EF-CCD	Remote GatanRpcServer	High Perf.
Continuum 1069 K3 HR	EF-CCD	Remote GatanRpcServer	High Perf.
Continuum 1069 K3 HR Dual	EF-K3	Remote GatanRpcServer	High Perf.
	EF-CCD	Remote GatanRpcServer	High Perf.
BioContinuum 1067 K3	EF-CCD	Remote GatanRpcServer	High Perf.

Embedding type:

- *Local GCI2*: basic interface to the GMS software on the Microscope PC.
- *Remote GCI2*: basic interface to the GMS software on the Gatan PC.
- *Local GatanRpcServer*: high performance interface to the GMS software on the Microscope PC.
- *Remote GatanRpcServer*: high performance interface to the GMS software on the Gatan PC.

2.4 Discontinued hardware

None since the previous release.

3 Operation, Applications and Workflow Integration

3.1 New features

Titan and Talos

- Apollo 1.2.0 is now included the TEM Server installation. If an earlier version is already present on the Microscope PC, then it will be upgraded automatically.
- Microsoft Edge Enterprise is now included in the TEM Server installation as the default browser.

Talos

The Tundra system has an all new user interface design on its OnSystem Display (OSD). The Tundra OSD supports basic operator information and functionality, including a system status overview, error notifications and recovery, temperature control and sample loading.

3.2 Improvements

Titan and Talos

- On System Display (OSD):
The speed at which FluCam images are displayed on the OSD is improved.

3.3 Impact on Service

No (major) items.

4 Source and High Tension

4.1 New features

Titan and Talos

- TEM Scripting interface: the Gun1 interface is extended with the HT Offset functionality.

4.2 Improvements

No (major) items.

4.3 Impact on Service

Titan and Talos

- HT Conditioning now uses higher vacuum levels.

5 Vacuum

5.1 New features

No (major) items.

5.2 Improvements

No (major) items.

5.3 Impact on Service

Titan and Talos

- Vacuum Analyzer: improved *Drag & Drop* functionality.

Titan

- The Ice Growth test is now also available on Spectra systems.

6 Optics

6.1 New features

No (major) items.

6.2 Improvements

Titan and Talos

Sherpa > APM:

- *The Gun Tilt and Gun Shift* alignments are now automated for systems that do *not* have a Falcon 3EC camera and do *not* have Fringe Free Imaging.
On systems with a Falcon 3EC camera and/or Fringe Free Imaging, the Gun Shift and Gun Tilt alignments are still manual actions.
- APM can now be executed on a Ceta camera without manual adjustment of the Spot Size or Intensity.

Titan

- The Monochromator Spot Size can now be specified with higher precision.
- The instructions and help pages for various alignments are improved.

Talos

TEM Server 7.10.1

It is now possible to have 4 Automated Aperture Mechanisms (AAMs) on a system without an EDS detector.

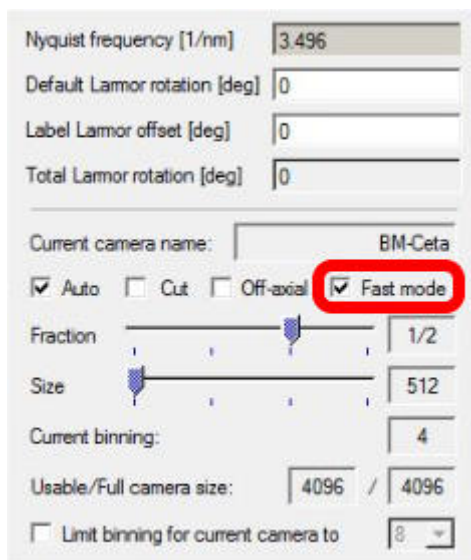
6.3 Impact on Service

Titan and Talos

- Sherpa > Service/Factory:
 - The *TEM Distortion Variation Measurement* is extended with an Offline Image Analysis functionality for previously acquired images that are stored on disk. TEM Distortion Variation Measurement is only available for Metrios systems.
 - *Dose Control* now offers a basic automated, accurate STEM Beam Current procedure. This procedure is only available for factory engineers.

Titan

- Corrector PC: New Linux Kernel version 7.10.
- Image Corrector:
The new CEOS 5.4.6 software introduces *Fast mode* for continuous acquisition.



The Fast mode setting is stored. When selected, it will *not* be reset when the Corrector UI is closed.

- Sherpa: the *Service/Factory > Flicker noise* tool is extended with a result graph for each measurement.

7 Cameras, Filters and Detectors

7.1 New features

Titan and Talos

- The new *Thermo Scientific Falcon 4i* camera is available as BM and as EF camera. The Falcon 4i camera can acquire 320 images per second. For improved interaction with software applications such as EPU, Tomography and Velox, the Falcon 4i camera has a 10 Gbps network interface towards Microscope PC.
- On systems with a Falcon 4i camera, the Storage Server on the Data Management Platform (DMP) Server is configured with a Linux-based SAMBA data storage. This enables faster data transfer than the Windows based data storage. The Linux-based SAMBA data storage supports also Ceta-2, Falcon 3EC and Falcon 4 cameras.
In a regular TEM Server update on a system that does *not* have a Falcon 4i camera, the Windows based data storage remains.
- Ultra-X and Super-X G2 (Lite): the new *AutoOn* function automatically enables the bias voltages as soon as the prerequisite conditions are fulfilled.

Talos

TEM Server 7.10.1

The new *Thermo Scientific Ceta-F* camera is available on Talos L120C and F200i systems.

7.2 Improvements

Titan and Talos

Falcon 4(i): Row and Column defects are now also masked in the EER stream.

7.3 Impact on Service

Titan and Talos

- Selectris (X):
 - Sherpa:
 - The reports for the tuning procedures now contain an additional summary of all results for the Tune isochromacity, Tune distortion and Crossover correction procedures.
 - In *Sherpa > Factory/Service > Energy Filter > HT Scaling* the list of fixed HT voltages is replaced by an entry field that accepts any value between 10 kV and 300 kV.
 - DataServices / D2i:
 - New UECs for the firmware in the SOR boards.
 - The commercial name is no longer reported in System Config > Configuration Scope: Configuration.
The commercial name is now only reported in the Energy Filter scope.
- EDX:

- Ultra-X: the progress of a CAB/A firmware update is now visible in the new Acquisition Monitor > Service tab.
- New Health Monitoring parameters, DataServices System Configuration items, and UECs. (see below)
- EMPAD-3S:
New D2i System Configuration items for the EMPAD detector: Name, Serial Number and 7NC.
- Gatan:
New UECs for cameras that use the *GatanRpcServer* interface:
 - Connection lost between Gatan PC and Microscope PC
 - Insertion/retraction failed

New HealthMonitoring parameters for EDX:

Subsystem	Component	Parameter
EDX	Detectors	Edx Energy Calibration Gain 1..6
EDX	Detectors	Edx Energy Calibration Offset 1..6
EDX	Detectors	Edx Bias Voltage R1 Detector 1..6
EDX	Detectors	Edx Bias Voltage RX Detector 1..6
EDX	Detectors	Edx Bias Voltage BC Detector 1..6
EDX	Detectors	Edx Bias Current R1 Detector 1..6
EDX	Detectors	Edx Bias Current RX Detector 1..6
EDX	Detectors	Edx Bias Current BC Detector 1..6
EDX	Detectors	Edx Bias Current FD1 Detector 1..6
EDX	Detectors	Edx Bias Current FD2 Detector 1..6
EDX	Detectors	Edx Bias Current RFS1 Detector 1..6
EDX	Detectors	Edx Bias Voltage IGR Detector 1..6
EDX	State	Edx Availability State
EDX	State	Edx Cooling State
EDX	State	Edx Enabled State
EDX	State	Edx Enabled/Disabled State Changes
EDX	State	Edx Operational State

Subsystem	Component	Parameter
EDX	Insertion	Edx Insert/Retract Movements Detector
EDX	Insertion	Edx Insertion Errors
EDX	Insertion	Edx Inserted Time
EDX	Insertion	Edx Insertion Position

New D2i System Configuration items for EDX:

Scope	Name	Type	Property
UltraX	EDX CAB/A board	Hardware	7NC
UltraX	EDX CAB/A board	Hardware	Product FRU ID
UltraX	EDX CAB/A board	Hardware	Product Manufacturer
UltraX	EDX CAB/A board	Hardware	Product Name
UltraX	EDX CAB/A board	Hardware	Product Part Number
UltraX	EDX CAB/A board	Hardware	Product Version
UltraX	EDX CAB/A board	Hardware	SerialNumber
UltraX	EDX controller	Hardware	7NC
UltraX	EDX controller	Hardware	partDescription
UltraX	EDX controller	Hardware	SerialNumber
UltraX	EDX detector module	Hardware	7NC
UltraX	EDX detector module	Hardware	partDescription
UltraX	EDX detector module	Hardware	SerialNumber
UltraX	EDX front-end 1..2	Hardware	7NC
UltraX	EDX front-end 1..2	Hardware	partDescription
UltraX	EDX front-end 1..2	Hardware	SerialNumber
UltraX	EDX sensor 1..6	Hardware	7NC
UltraX	EDX sensor 1..6	Hardware	SerialNumber

New Unique Error Codes (UECs) for EDX:

Subsystem	Device	Instance	Error Code
EDX	TEMPERATURE_SENSOR	SENSOR_TEMPERATURE	BOTTOM
EDX	TEMPERATURE_SENSOR	SENSOR_TEMPERATURE	HIGH_VACUUM
EDX	TEMPERATURE_SENSOR	SENSOR_TEMPERATURE	MID_VACUUM
EDX	TEMPERATURE_SENSOR	SENSOR_TEMPERATURE	TOP
EDX	CONTROLLER	FRONT_END_CONTROLLER	ERR_COOLING
EDX	CONTROLLER	FRONT_END_CONTROLLER	ERR_COOLING_OVER_CURRENT
EDX	SW_SERVER	TEM	ERR_COOLING
EDX	SW_SERVER	TEM	ERR_TUNING_HW_MISMATCH
EDX	SENSOR	SENSOR_1	ERR_SENSOR_BROKEN
EDX	SENSOR	SENSOR_2	ERR_SENSOR_BROKEN
EDX	SENSOR	SENSOR_3	ERR_SENSOR_BROKEN
EDX	SENSOR	SENSOR_4	ERR_SENSOR_BROKEN
EDX	SENSOR	SENSOR_5	ERR_SENSOR_BROKEN
EDX	SENSOR	SENSOR_6	ERR_SENSOR_BROKEN

8 Motion and Autoloader

8.1 New features

Titan and Talos

CryoCycle:

The recommendation to run a CryoCycle is no longer triggered by a fixed interval of 18 days, and no longer has a fixed duration of 12 hours.

Instead, the CryoCycle is uses a configurable threshold value for the temperature of the Autoloader docker. When the threshold value is reached, the TEM User Interface displays a recommendation to start a CryoCycle. The CryoCycle runs until the desired conditions are achieved again.

The threshold value can be edited in the Autoloader Cockpit tool.

8.2 Improvements

Titan and Talos

Compustage: the speed during the post-home range check is reduced.

8.3 Impact on Service

Titan and Talos

Autoloader:

- New UEC in context of the CryoCycle interval improvement.
`TEMPCONTROL.SENSOR_TEMPERATURE.DOCKER (40.103.0.x) :`
`ERR_UNEXPECTED_VALUES`
- New D2i System Configuration item: Autoloader Serial Number.

9 TAD, Service Tools, Installer and Licensing

9.1 New features

Titan and Talos

- Prerequisites installation:
 - Microsoft Edge Enterprise is now included in the TEM Server installation as the default browser.
 - The chipset driver for the HP Z4 G4 Microscope PC is updated.
 - The Prerequisites installer now creates a *TEM Experts* group.
- TAD: Stage wobbler function is added.

Titan

- TAD: Support for the OMGL MiniCondenser lens is added.

Talos

- Configurator:
The MicroED (MED) lens series are available for Talos F200E systems.
- Tundra:
 - The Tundra system (7NC: 1253068) is now supported by the master installer, incl. the *Semi-automated loader* is for Tundra systems.
 - The SALSA (Semi Automated Loader Service Application) is available via the Microscope Software Launcher > Tools menu. Detailed information and instructions for use will be published in service documentation for the Tundra system and the Semi-automated Loader.

9.2 Improvements

Titan and Talos

- Configurator:
For the Energy Filter, the Falcon 3EC camera option is removed.

Titan

- Configurator:
 - The CCB option is removed from the Communication section.
 - The CcCOR corrector option is removed from the Corrector section.
 - A warning is displayed when more than four water-cooled cameras are selected.

9.3 Impact on Service

No (major) items.

10 Solved Issues

Solved in TEM 7.10.0

ID	Description	Titan	Talos
AUTSTR-2955 RDTS-771	AutoSTEM training (Optistem?) failed because of 3Fold stigmators		X
CAMERA-4052	Different linearization coefficients calculated on win10 (camera perf. test tool.)	X	X
CAMERA-5055, TT856573	F4: Cooling is switched off when not controlled by server	X	X
CAMERA-6746	F4 post counting gain does not update data created after acquisition	X	X
CAMERA-6845	CPI goes into error state during cooling down cycle of the Falcon4 camera "TEC error"	X	X
CAMERA-7264	Acquisition with EER and Binning=2 results in incorrect EER stack	X	X
CAPPPS-3233	Recent CAB BSP does not include xdevcfg device	X	X
DBOC-1098 CN45911	Can't perform LM Magcal on EF-F4/F4service camera	X	
DBOC-951	Fix All MaxWare regarding binning array size (since Gatan can send large lists)	X	X
DBOC-992 RDTS-913	Magcal / position factor fails most of the times at low kV (30kV)	X	
DBOPTICS-2537	Holography (BiPrism). Diffr. button is not marked yellow in LM mode	X	
DBOPTICS-2595	Full scan Field-of-view not working for LorentzStem causing TIA problems	X	
DBOPTICS-2612	Over-the-hill SuperTwinPrime lensseries not correct	X	
DBOPTICS-2693	Fix download of corrector HAL parameters	X	
DBOPTICS-2710	Switching magnification in Mh from Sherpa results in exception		X
DBOPTICS-2723	NormalizationCounter is deployed to wrong place	X	
DBOPTICS-2758	HTOffset changes from Source is not pushed to Optics for HT tank generation 1	X	

ID	Description	Titan	Talos
DOI-2616	Timestamp in the TEM UI Alignments control panel is not updated after APM alignment	X	X
IADTPI-218	Digital Micrograph (GMS) error acquiring Velox SI / EDS+EELS sync: "SI Acquisition aborted. No SI data found"	X	X
IADTPI-49	TEM server hangs when using Velox and TIA at the same time with OneView	X	X
IN-543	Installer reports "Finished" but progress bar is at 90%	X	X
IN-853	Progress bar is not finished, when installation of TEM fails	X	X
MOT-4130	Compucentricity Calibrate online Help is inconsistent with the PDF Manual	X	X
MOT-4493	Low spot sizes available with holder removed - X-ray safety	X	X
MOT-4596	TAD Info signal Voltage Error indicates Voltage OK during UVP condition	X	X
MOT-4617	Aperture alignment checker flags the new DualX OBJ template layout	X	X
MOT-4727	feibboxPiezostage.exe crashed	X	X
MOT-4820	[TSC] TAD Info signal Voltage Error indicates Voltage OK during OVP condition	X	X
MOT-4834	In Tad is stated that iVIS is not compensating (info window shows a working iVIS)	X	X
NPD-913	Flucamviewer autoexposure task does not give the correct exposureronald	X	
RDTs-922	Flucamviewer crash selecting annotation	X	X
SCANDIUM-3327	Hardware synchronization of non-embedded STEM detectors is broken	X	X
SCANDIUM-3358	Acquisition Monitor crash for STEM acquisition (rasterscan: 1x1)	X	X
SCANDIUM-3451	Updated scan alignments are not properly applied to a running scan	X	X
SCANDIUM-3493	4D STEM: Ceta pixel size is not correct for non-square image	X	X
SCANDIUM-3537 SCANDIUM-3554	Current coefficients must reflect the sum of the participating segments and not the average	X	X

ID	Description	Titan	Talos
SCOEMT-5711	TrafficLights: Vacuum message missing SI unit	X	X
SCOEMT-5717	TrafficLight - The cooling and cooled state for the camera are not distinguished	X	X
SCOEMT-5785	TrafficLight is trying to recover camera is not cooled state	X	X
SCOEMT-5821	When traffic lights service crashed, it did not start after server restart	X	X
SCOEMT-5925	TrafficLight reports EF and BM nodes both using generic Dragonfly name.	X	X
SCOMS-2324	Server crash when unloading cartridge from stage	X	X
SCOMS-2379	HealthMonitoring shows a Holder temperature of 0K	X	X
VEL-37589	TEM Server crash when close/open Velox and system has OneView camera	X	X

Solved in TEM 7.10.1

ID	Description	Titan	Talos
CAMERA-8002 RDTS-1351	Camera negative counts underflow in temapps	X	X
CAPPPL-1588	Solve randomization issues for line defect (horizontal vs vertical lines behave differently)	X	X
CAPPPS-3411 RDTS-1313, 1347	EPU stopped with the error: Automated acquisition terminated with an error: Acquiring an image failed. No connection to RPC server	X	X
DBOC-1429 RDTS-1233	DBOC-1376: Unable to minimize TEM distortion pattern	X	
DOI-2907	Autostar 2.7.x AZLP: fix for monochromator hysteresis and overexposed dark reference	X	
DOI-2969	TAD error with new 7nc OPD board Selectris	X	X
IADM-1196 RDTS-1309	Ceta F - Frame time can be wrong when the camera is not set up correctly	X	X
IADM-1266	Ceta16M Service Tool shows warning: "Camera Settings are not correct for Ceta2"	X	X

ID	Description	Titan	Talos
IADTPI-434	In Situ Memory Pool fix	X	X
MOT-5176, 5177 RDTS-1237	Parasitic EDS signal from OBJ apt due to wrong Y-axis retraction of the aperture on Talos L120C		X
MOT-5484	Prodrive G3 firmware downgrade not working from TAD		X
OSD-1028	OSD 1.0 unresponsive when Flucam View is displayed		X
OSD-1147	Flucam view not refreshed after 1 hour		X
SA-2527 RDTS-957	Limit the size of Align Genie log in the DAR		X
SA-3770	Sherpa Align Genie TypeError		X
SA-3819	Stigmat Beam does not work in microProbe	X	X
SCODBO-6785	CFEG: Beam Current in status bar can't be added	X	
SCOINFRA-1864	ASCE HM read microscope config file	X	X
SCOMS-2402	Normal user is asked what the temperature state of the autoloader should be	X	X
SCOMS-2420	EPU - TEM Server reports slot isn't available for loading	X	X
SCOVAC-2167	TEM Server does not start, vacuum failed to initialize	X	
SPEC-5990 RDTS-1284	Ultra-X Tuning not possible if at least 1 segment is not connected	X	
SPEC-6094 RDTS-1253	Ultra-X FAT tool multi spectrum is skipping the first acquisition High throughput spot 2	X	
SSIT-1447	Missing "C:\ProgramData\Thermo Scientific AutoStar\Log" in the DAR locations	X	X
SSIT-1517 RDTS-1318	Taro Simple - hpcserver crashes immediately after startup	X	

11 Known issues

For an overview of all relevant Known Issues, see: [307271](#) .

For a selection of Known Issues, detailed descriptions and workarounds are available:

- In [Fluid Topics](#) .
- On the Service CD.

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