



Customer Release Notes

This document describes the following:

- Zap-X system software content that is new with the DP-1004 release.
- Changes to Zap-X system software prior to DP-1004, but since the most recent release of the user manuals (E0920-00003 Rev C, E0920-00004 Rev C, released April 2020)
- Known issues and workarounds.

1. Compatibility:

Zap-X software is a set of major software components. These release notes are for the following versions:

- Treatment Planning Software: v1.8.54.
- Treatment Delivery Software: v1.8.51.
- Treatment Delivery Control Service Software: v1.8.51.
- System Database Software: v1.8.17.

2. Content of DP-1004

The most recent release of Zap-X software is the DP-1004 release. It contains the following:

2.1. DP-1004 Features

DP-1004 contains the following features:

- **Full support for German and Italian languages:**
 - User interface in local language. By default, Zap-X software will use the language configured in Windows.
 - Support for comma as decimal indicator, if configured in Windows.
 - Labels and user manuals available in the German or Italian.
- **Privacy enhancements:**
 - Anonymized export of patient data. (see section 9.1 of the TPS manual)



- Ability to full delete all records of a patient and relevant data. (Please contact your Zap representative for support)
- Zap Surgical Systems compliance with EU GDPR laws.
- **Multiple TPS Stations:** Full support for multiple planning stations connected to the same database. (Please contact your Zap representative for support)
- **Enhanced service tools:**
 - Remote service access.
 - Back-up Restore Tools.

2.2. DP-1004 bug fixes

DP-1004 contains fixes for the following issues observed in the field:

Auto Alignment failed to move to initial position	6949
TDS mismatch between CT data and meta data prevents plan loading	8310
TDS unable to automatically create axial alignment path	8355
KV technique did not reset to standard values after restart	8356
External SICK scanner fault (with L9 code)	8608
TDS mismatch between CT data and meta data prevents plan loading	9179
TPS interrupts when using inverse planning with auto path	9580
Beams are dropped during delivery of Dry Run plans	9655
KV technique in Steel Ball Test did not reset to standard values after restart	10134
Tx report does not include partial beam	10221
Tx report does not include partial beam, 50 MU - Copy (@ BBS)	10295
Collimator homing triggered multiple times after starting isocenter	10430
Vertical door unresponsive	10591
Report KV image count inaccurate	10639
Unscheduled power on of Zap system	11031
USB camera is considered off when the contrast is low.	6225
Mfg stress test fails to deliver multiple beams after an estop has been triggered	6270
No beam during script execution	6727
Timing Issue when Running Scripts	6794
Default green ball algorithm issues	9328
Table Yaw Calibration Failed	11073
Gantry motion error due to unexpected large gantry position change	11404

3. Previous releases

The DP-1004 contents include features and bug fixes that may have been installed previously on your system but were not considered part of a full-field release. Please



contact your Zap representative if you are unsure if your system already had this content

3.1. Features

- Support for a broader range of CT sources (CRN-101)
- Delivery path optimization to remove unused nodes (CRN-090)
- Support for music played from console into system (CRN-078)
- Faster dose calculation and simulation process (CRN-088)
- Improved Auto-sphere packing (CRN-88)
- Enhanced support for role-based authorization.

3.2. Bug Fixes

5731	User commcomm is not available
9326	Yaw Table Calibration is Off
10220	Second isocenter delivery started without moving table from first iso position
10503	Failure to load manual axial alignment path for auto-generated path
10506	Database error interrupted treatment after auto-alignment
10503	Failure to load manual axial alignment path for auto-generated path
11428	Communication between Console and Control PC dropped due to incorrect IP address
11449	LinacApp, GantryHomingApp and KVImageAC standalone apps do not launch - Copy
11450	TDS crash during delivery - Copy
11472	Change SF6 limits to 26-32psi for LCB (TwinCAT PLC change)
11474	Change Ion Pump Current limits for LCB (TwinCAT PLC change)
11482	Update TwinCAT PLC version to reflect new limit changes
11507	Revert SF6 limits back to 32-41psi for LCB (TwinCAT PLC change)
4834	HV can be enabled outside of linac app(in service mode)
4807	Slow performance when dragging checker board on patient alignment display
4696	Image acquisition error that is triggered during axial alignment does not exit axial alignment
5045	TDS random crash while in Tx View
5847	Treatment View cannot be launched when camera is disconnected
5733	Delivery automation logic error after steel ball test completion
5935	Disconnecting SensoryAy(analog) cameras from the operator or control PC does not change the
6164	Standalone LinacApp, PatientTable, GantryHomingApp fail after login
6165	MV calibration tool delivers only one beam
5670	fast dose calculation does not update afater inverse planning and placing a new isocenter
5671	inverse planning reset the scaling factor of all the isocenters to 1
4525	TPS interrupts when planning vew window is resized
4524	slow performance listing patients in Patients overview
4763	patient without CT images are displayed in the list of patients



5675	open plan message displays {0} when data are different from system data
4890	localization (missing string)(non consistency in added target)
4896	Localization strings (Contour List)
5715	Constraints do not display the target name and the boundary value
5734	Original dose volume from an old plan was not displayed after commissioning data update
5848	Self check fails at estop intermittently (part2)
4986	Selecting dose cGy to % zoomed the image view panel
5809	unable to simulate a plan due to "image updae has been detected"
5842	error message is truncated
5883	localize combobox for Plan Settings Dose Display Mode
6217	unable to export paln from computer hosting both broker and TPS
6230	collimator selection in autosphere packing not working
6322	time out issue through VPS to load the patient page
6509	Provide user with notification and ability to reset AFC when the AFC mode is stuck in HOLD_NS
6140	Only one auto-generated path labeled "1" is available
6226	Verify Images message box is displayed despite no changes to dicom series
6319	TPS cannot initialize table kinematics via path checker assembly
6328	Inconsistency between point dose calculation and dose volume in the air close to the nodes
6638	TPS warns that 3 beams to be removed and removes 32 beams
6719	Merging inverse planning plans removes MU optimization
8488	TPS interrupts when using inverseplanning with unvalid path
8494	Reopening a delivered plan on TPS 1.8.52, fails to load, asks for recompute dose and TPS crashes
8495	Path not available in the delivery UI.
8566	TPS shows an error on the dose volume loading
8620	When trying to create a isocenter at focus point position, TPS interrupts
8662	Can create and approve a plan, when TPS is locked out after timeout.
8672	Ball Cube icon on a ball cube CT , Interrupts the TPS
8692	collision test of paths generated using auto path
8763	Path validation requires several clicks to approve a path
9230	The path library zip was Zero and the TPS notification showed 100% completed
8333	"Continue without sending approval" button on auto-alignment successful message is not responsive
6643	Could not navigate to auto alignment page with new multiple isocenter delivery workflow
6635	Combined multiple patient information into single report
6507	Failure to schedule system startup was not brought to user's attention
5933	TreatmentView no longer showed progress during system power up
4615	Steel Ball Zap Position and Beam Offsets are incorrect
4600	System failed to initialize after power up with vertical door partially open (shell closed and table at iso)
2784	The "Estops Button" in the diagnostic windows says "All the Estops are clear" even when the estop is asserted
8431	Two TDCSs are brought up when launching TreatmentApp
8489	Optimized path was not generated in TDS for the paths with unused nodes in path
8490	Treatment cannot be resumed after alignment is performed between the isocenters in a fraction



8491	TDS crashes when the next button is clicked after the patient extraction
8493	Treatment details are not available in the report when optimized paths are used
8501	Optimized path is not visible to the user till clicking on a node with beam
8642	Feature to switch between planned path and optimized path is broken
8667	The starting node of the optimized path is always the first node of the path when using the non-optimized path
8772	Axial path not created for optimized plans with region X paths
8971	Fraction ID was inconsistent in report
9108	Beam is not delivered in a regular plan after a dry run
6714	Intermittent TDCS Communication Loss
4872	Console PC debug log files don't split into daily folders
4768	Incorrect fraction ID for reports for makeup fraction

4. Known issues and workarounds

- **Failed Self-Check (4613, 4836, 4989, 6603):** If self-check fails, follow the following steps:
 - Make sure there is nothing on the table.
 - Make sure the table cushion is correctly positioned.
 - Check for other obstacles in or around the system.
 - Power down the system and power it back up again.
 If there is still an issue after following these steps, call Zap service for additional support.

- **MV exit dose conflicts with prediction (5650):**

Occasionally, the exit beam attenuation is not calculated accurately based on the CT information. This can result in an error when the MV imager provides data that conflicts with the calculated value. Referencing the MV dosimeter graph can confirm if the problem is from a few miscalculated beams or a broader problem with the dosimetry. To continue with treatment, turn off the dose check by right clicking on the overlay image in the delivery view and uncheck 'enable' in the context menu.

- **Patient extract from Operator Console inoperable after E-stop (7683):**

Use the pendant to extract the patient, if patient extract from the Operator Console is inoperable after an E-stop was triggered.

- **Final beam may not be fully recorded when a treatment is aborted (8981):**

When a treatment is aborted partially through a beam the final beam record may be off by several MU. Note the actual beam delivered and compare that to what is in the report. Adjust the make-up fraction as needed.

- **Dosimeter calibration factors in QA page not saved automatically (9657):**

The dosimeter calibration factors in QA page need to be saved manually to take effect.



- **Cameras were not showing images (10155):**

In rare cases the image panels on the right-hand monitor are blank after booting. Restart the Treatment View application to view the image panels.

- **No DRR image displayed during axial alignment (6948):**

A minor error in the image display occasionally causes a DRR image not to appear during axial alignment. The DRR is calculated and an axial alignment offset is still calculated. This will have no effect on treatment accuracy.

- **MV Imager measurement timed out during treatment (10284):**

Occasionally, the beam does not trigger the MV imager to start recording. This results in a time out error that can be cleared to continue treatment. Unless this happens repeatedly, there is no concern about the accuracy of the treatment.