



European Commission
Directorate-General for Research and Innovation
Number 945119 – STOPSTORM



Dear Stopstorm Consortium Members and Collaborating Partners,

for the start of the project we are conducting a detailed survey. This will give us the opportunity to capture the current status of clinical trials, implemented process chain, treatment delivery and quality control in relation to STAR treatments. The evaluation will enable the different work groups to speed up on their tasks.

This survey will not be anonymous due to possible need of further information and is mandatory for all participants. For possible queries of individual working groups, please provide contact information for the corresponding disciplines (see below).

The survey is divided into three sections: Questions for the Electrophysiology Section, the Radiation Oncology Section, and the Medical Physics Section. In the end of the questionnaire you will find place for Comments, Remarks and maybe further answers for some question, if the given space wasn't enough.

We ask that you complete the survey together as a team and forward it internally to the appropriate departments.

If you have any questions during filling the questionnaire, please feel free to contact Melanie Grehn (see mail adress below).

We are looking forward to the cooperation and wish everyone a good start of the project.

Best regards.

Contact Information: **example:** Melanie Grehn, CAU, grehn@saphir-rc.com

Cardiology/Electrophysiology:

Radiation Oncology:

Medical Physics:

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If this survey will lead to a journal publication, please name the primary contact with affiliations for such publication.

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List of Abbreviations

CBCT	cone beam computed tomography
CT	computed tomography
DCA	three-dimensional conformal arc
DIN	Deutsches Institut für Normung (German Institute for Standardization)
EAM	electroanatomical mapping
ECG	electrocardiogram
IAEA	International Atomic Energy Agency
ICD	implantable cardioverter defibrillator
ICM	ischemic cardiomyopathy
ICRU	International Commission on Radiation Units
IMRT	intensity modulated radiotherapy
ITV	internal target volume
MRI	magnetic resonance imaging
NICM	nonischemic cardiomyopathy
PET	positron-emission tomography
PPU	peripheral pulse unit
PTV	planning target volume
SBRT	stereotactic body radiotherapy
SPECT	single photon emission computed tomography
STAR	stereotactic arrhythmia radioablation
TV	target volume
VMAT	volumetric arc therapy
VT	ventricular tachycardia

CARDIOLOGY/ELECTROPHYSIOLOGY

1. How is your cardiac electrophysiology department/unit organized?

- ☐ independent department/unit
☐ part of the cardiology department
☐ combined with other departments:

2. What type of facility is your electrophysiological department assigned to?

- ☐ University Hospital
☐ General Hospital
☐ Private Clinic
☐ Private Practice
☐ other (please name):

3. How is your electrophysiology department experienced?

- number of EP Laboratories:
- ☐ annual number of VT ablations in structural heart disease
- ☐ less than 20
☐ 20-50
☐ 50-100
☐ more than 100



- ☐ annual number of epicardial VT ablations
- ☐ less than 20
 - ☐ 20-50
 - ☐ 50-100
 - ☐ more than 100

4. What is your institution equipped with for monitoring and treating patients that are critically ill and present with frequent VT episodes?

- ☐ intensive care unit
- ☐ intermediate care unit
- ☐ mechanical ventilation
- ☐ cardiac pacing
- ☐ extracorporeal membrane oxygenation (ECMO)
- ☐ other relevant equipment (please name):

5. Have your institution already participated in multicenter clinical trials?

- ☐ Yes
 - ☐ lead
 - ☐ participation
- ☐ No

6. Have your institution already participated in multicenter benchmark studies?

Ablation:

- ☐ Yes
 - ☐ lead
 - ☐ participation
- ☐ No

Mapping:

- ☐ Yes
 - ☐ lead
 - ☐ participation
- ☐ No

Audits:

- ☐ Yes
 - ☐ lead
 - ☐ participation
- ☐ No

7. What do you consider as prerequisites as an indication for STAR treatments?

- ☐ structural heart disease
- ☐ presence of an ICD
- ☐ recurrent sustained monomorphic VT
- ☐ electrical storm
- ☐ optimal antiarrhythmic and heart failure medication
- ☐ one or more previous failed catheter ablations
- ☐ contra indications to catheter ablation (intraventricular thrombus, etc.)

8. What do you consider as contraindication for STAR treatments?



- ☐ polymorphic VT
- ☐ ventricular fibrillation
- ☐ temporary causes for VT
- ☐ channelopathies
- ☐ eligibility for catheter ablation
- ☐ advanced heart failure (NYHA IV)
- ☐ ICD malfunction
- ☐ prior chest irradiation

Which prior heart dose would you accept?

- ☐ life expectancy < 6 months
- ☐ pregnancy
- ☐ young age (e.g. < 60years)
- ☐ breast-feeding
- ☐ VT region directly adjacent to risk structure e.g. stomach

9. Do you already use the following examinations for preprocedural diagnostics and imaging of VT for STAR within your institutional protocol?

- ☐ Non-/Invasive electroanatomical mapping (EAM)
- ☐ Contrast Enhanced Computed Tomography (CT)
 - ECG-triggered: ☐ Yes ☐ No
 - resolution:
 - temporal: phases
 - spatial: mm
- ☐ Magnetic Resonance Imaging (MRI)
 - ECG-triggered: ☐ Yes ☐ No
 - resolution:
 - spatial: mm

- ☐ Positron-Emission Tomography (PET) and metabolic PET-scan

Which Tracer do you use?

- ☐ Single Photon Emission Computed Tomography (SPECT)

Which Tracer do you use?

To submit your data to the registry, data need to be pseudo anonymized. Can you anonymize your data?

- ☐ Yes (Please specify which format you can anonymize and the software you use for)

- ☐ No (Please specify which format you cannot anonymize)



10. Do you have a dedicated clinical program for catheter ablation of cardiac arrhythmia?

☐ Yes

with certification by the respective national cardiology society?

☐ Yes

☐ No

☐ No

Are there any general quality audits for ablation?

☐ Yes

☐ No

11. Which mapping system are you using for invasive VT ablation in

ICM:

NICM?:

(if you use more than one software, please specify the percentage of use for each software, e.g. Biosense Webster CARTO (50%), Boston Scientific Rhythmia (30%), Abbott EnSite NavX (20%))

respective Version Number:

data format (e.g. DICOM):

Do you have the opportunity to take screenshots
and to save them as png-files?

☐ Yes

☐ No

☐ Yes

☐ No

12. Which mapping catheter do you generally use?



13. Do you use non-invasive EAM ?

☐ Yes

Which Software do you use? (please name, incl. version number)

☐ No

14. Do you perform an EAM especially before performing STAR?

☐ Yes

☐ No

How old may the EAM data be that you would accept for the STAR procedure? weeks

Under which condition would you accept older data? (please describe)

15. Do you merge the cardiac mapping images with CT or MRI images?

☐ Yes

☐ No

Do you perform a motion compensation during EAM procedure?

☐ Yes

☐ No

Do you have implemented a quality assurance program for

merging ☐ Yes ☐ No

motion compensation? ☐ Yes ☐ No

16. Which data you use for generating the TV?

☐ 12 lead ECG of the VT

☐ EAM

☐ Contrast Enhanced CT

☐ ECG triggered

☐ not ECG triggered

☐ Cardiac MRI

☐ PET/SPECT data

☐ other (please name):

17. Do you have a ☐ general specification for TV definition or ☐ is it patient-dependent?

On what ground is base your TV delineation:

☐ Mapping during VT

☐ Pace-mapping

☐ Reduced voltage

range:

☐ Late ventricular potentials, fragmented potentials



☐ other (please name):

Do you include

- ☐ only the clinical VT areas
☐ the whole arrhythmogenic substrate for TV definition
☐ other (please describe):

18. Do you organize a patient's aftercare respectively a follow up?

☐ Yes

What examinations do you perform? (please add intervals)

☐ post-treatment mapping:

☐ CT:

☐ MRI:

☐ ECG:

☐ Echocardiography:

☐ ICD interrogations:

☐ No

RADIATION ONCOLOGY

19. How is your radiation oncology department organized?

- ☐ independent department
☐ combined with radiology department
☐ combined with oncology department
☐ combined with other departments (please name):

20. What type of facility is your radiation oncology department assigned to?

- ☐ University Hospital
☐ General Hospital
☐ Private Clinic
☐ Private Practice
☐ other (please name):

If your department is not in the same building as the cardiology/electrophysiology department: How far have the patient to be transported and how is it organized. Please describe.

21. How



number of radiotherapy treatment rooms:

years of institutional SBRT experience:

- ☐ less than 5
☐ 5-10
☐ more than 10

annual number of extracranial stereotactic treatments (per patient treatment):

- ☐ less than 50
☐ 50-200
☐ 201-400
☐ 401-600
☐ more than 600

22. Have your institution already participated in multicenter clinical trials?

- ☐ Yes
☐ lead
☐ participation
☐ No

23. Have your institution already participated in multicenter benchmark studies?

Contouring:

- ☐ Yes
☐ lead
☐ participation

☐ No

Treatment Planning:

- ☐ Yes
☐ lead
☐ participation

☐ No

Delivery Quality Assurance:

- ☐ Yes
☐ lead
☐ participation

☐ No

Audits:

- ☐ Yes
☐ lead
☐ participation

☐ No

24. Does your facility already perform STereotactic Arrhythmia Radioablation (STAR)?

- ☐ Yes

How many cases have you treated in total:

Do you perform STAR on a general existing protocol?

- ☐ Yes
☐ No



Are you participating in a Clinical trial?

☐ Yes (Please add name of the trial, trial-ID and number of subjects to be included)

- ☐ actively recruiting
☐ in preparation
☐ not yet planned

Have you requested or obtained ethical approval from your centre's committee (or from any other body on behalf)?

- ☐ requested
☐ obtained
☐ No

Was it necessary to obtain further

regulatory

☐ Yes

☐ No

government

☐ Yes

☐ No

institutional approval?

☐ Yes

☐ No

Do you lead the Clinical trial?

- ☐ Yes
☐ No

Did you experience any issue related to legal and regulatory framework related to STAR? (please describe)

☐ No

☐ No

Are there any major obstacles in implementing STAR treatments?

☐ Yes (please describe):

☐ No

25. Generally, how would you treat STAR patients?

as in-patient (patient in cardiology ward)?

☐

Yes

☐

No

as in-patient (patient in radiation oncology ward)?

☐

Yes

☐

No

as out-patient?

☐

Yes

☐

No

26. Do you perform the TV definition by an interdisciplinary team?



- ☐ Yes, including:
- ☐ Electrophysiologist
 - ☐ Cardiologist
 - ☐ Radiation Oncologist
 - ☐ Medical Physicist
 - ☐ Radiologist
 - ☐ other (please name):
- ☐ No

27. Do you have a dedicated clinical program for SBRT?

- ☐ Yes
- With an established workflow for
- | | | |
|--------------------------------|------------------------------|-----------------------------|
| image guidance: | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| motion management: | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| standard operating procedures: | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
- ☐ No

28. How do you perform the patient positioning/immobilization for STAR?

- ☐ vacuum mattress
- ☐ positioning aids like combi boards etc. (please name):
- ☐ other (please describe):

29. Cardiac Motion Management for STAR:

Do you include an ECG-triggered CT in your ITV concept?

- ☐ Yes
- ☐ No
- ☐ statistical margin or
- ☐ other method (please describe):

30. What kind of Image Registration and Contouring Software do you use? (please list)

Image Registration:

- ☐ rigid
- ☐ deformable

Do you have implemented a quality control?

- ☐ Yes ☐ No

Which data do you register?

- ☐ Contrast-Enhanced CT
- ☐ MRI
- ☐ Cardiac Mapping

☐ other (please name):

31. How do you transfer the TV to the treatment planning system?



- ☐ manual, [4]
- ☐ atlas based (17 Segment model), [5]
- ☐ automatic
 - ☐ Tool of Schweikard-Group (University of Luebeck, Germany)
 - ☐ Slicer 3D, [6]
 - ☐ VTK, [7]
- ☐ other (please name):

32. Is the transfer of the TV to the planning system subject of quality control?

- ☐ Yes (please describe):

- ☐ No

33. Do you compare the final TV in three dimensions in the treatment planning system in reference to other structures e.g. left ventricle, aorta etc.?

- ☐ Yes

- ☐ same structure according to a protocol (please name)

- ☐ patient-dependent

- ☐ No

34. Is there a joint final TV acceptance with the cardiologist/electrophysiologist?

- ☐ Yes

- ☐ No

35. Do you contour the following substructures of the heart?

- ☐ Ventricles r/l
 - ☐ whole structure
 - ☐ wall
- ☐ Atrium r/l
 - ☐ whole structure
 - ☐ wall
- ☐ Coronary arteries
 - ☐ Proximal
 - ☐ Mid + distal
- ☐ Valves
- ☐ Conducting nodes
- ☐ Aorta
- ☐ Pulmonary vein
- ☐ Vena cava
 - ☐ one structure
 - ☐ split in inferior and superior
- ☐ Pulmonary arteries
- ☐ Papillary muscles



Which guidelines do you use?

- ☐ Duane et al, [8]
- ☐ Danish Contouring Atlas, [9]
- ☐ Feng et al, [10]
- ☐ Loap et al, [11]
- ☐ other (please name):

36. Do you contour the following critical structures?

- ☐ Lungs r/l
- ☐ Broncheal tree
- ☐ Trachea
- ☐ Oesophagus
- ☐ Stomach
- ☐ Liver
- ☐ Spleen
- ☐ Spinal canal
- ☐ ICD

Which guideline do you use?

- ☐ Kong et al, [12]
- ☐ Jabbour et al, [13]
- ☐ Mir et al, [14]
- ☐ other (please name):

37. Which ICD recommendations do you follow?

- ☐ no use of > 6 MeV
- ☐ caution use of
 - ☐ protons
 - ☐ heavy ions
 - ☐ energies > 6 MeV

38. How large are your general margins for PTV generation for STAR?

mm

What recommendations do you follow? (please name)

39. Which dose do you generally prescribe for STAR?

Dose: Gy

based on:

- ☐ Maximum Dose:
- ☐ Coverage (ICRU Report 91):
- ☐ Mean/Median Dose (ICRU Report 83):



☐ ICRU reference point (ICRU report 50):

☐ other (please name):

Are you allowing inhomogeneities e.g. simultaneous integrated boost (SIB)?

☐ Yes

Where do you allow the SIB? (please describe)

☐ No

Are you allowing under-coverage of the PTV for sparing of critical structures e.g. stomach?

☐ Yes

☐ No

40. Do you perform a repeated patient position re-check during treatment delivery?

☐ Yes

Which procedure is used? Please describe.

☐ No

41. Do you perform a continuous target motion tracking during treatment delivery?

☐ Yes

Which method is used? Please describe.

☐ No

42. What kind of Cardiac Patient Monitoring do you use during treatment delivery?

☐ ECG Monitoring

☐ ICD Monitoring

☐ Cardiac Rescue Team

☐ other (please name):



MEDICAL PHYSICS

43. Are there any quality control procedures implemented for the assessment of the device or method used for diagnosis and imaging?

☐ Yes, for the following device or method:

- ☐ Contrast-enhanced CT
- ☐ MRI
- ☐ PET
- ☐ SPECT

☐ No, but planned

☐ No quality control implemented

44. Do you perform a consistency test on the device or method you use for diagnosis and imaging?

☐ Yes, for the following device or method:

☐ Contrast-enhanced CT

According to (please describe):

☐ national guidelines:

☐ international guidelines:

☐ other:

At what intervals does the test take place?

- ☐ weekly
- ☐ monthly
- ☐ quarterly
- ☐ yearly
- ☐ other (please name):

☐ MRI

According to (please describe):

☐ national guidelines:

☐ international guidelines:

☐ other:

At what intervals does the test take place?

- ☐ weekly
- ☐ monthly
- ☐ quarterly
- ☐ yearly
- ☐ other (please name):

☐

PET

According to (please describe):

☐

national guidelines:

☐

international guidelines:

☐

other:

At what intervals does the test take place?

☐

weekly

☐

monthly

☐

quarterly

☐

yearly

☐

other (please name):

☐

SPECT

According to (please describe):

☐

national guidelines:

☐

international guidelines:

☐

other:

At what intervals does the test take place?

☐

weekly

☐

monthly

☐

quarterly

☐

yearly

☐

other (please name):

☐

No, but planned

☐

No constancy test implemented

45. Which planning CT do you use?

☐

Siemens

☐

Philips

☐

Canon

☐

GE

☐

other (please name):

respective model:

How many slices?

4D capable:

☐

Yes

☐

No

Possibility for dispensation of contrast agent:

☐

Yes

☐

No



Use of a metal artifact reduction algorithm:

☐ Yes

Which one (please name):

☐ No

slice thickness for SBRT: mm

46. Do you perform a consistency test on your treatment planning CT?

☐ Yes

☐ according to national guidelines

☐ according to international guidelines

Which one (please name):

At what intervals does the test take place?

☐ weekly

☐ monthly

☐ quarterly

☐ yearly

☐ other (please name):

☐ No

47. Respiratory Motion Management for STAR:

Do you compensate the respiratory motion?

Breath-Hold Technique: ☐ Yes

☐ No

☐ Inspiration

☐ Expiration

Forced Shallow Breathing with abdominal compression: ☐

Yes ☐ No

Free breathing: ☐ Yes

☐ No

Internal Target Volume Generation:

using a 4D CT:

☐ Yes

☐ No

spatial resolution: mm

temporal resolution:

based on:

☐ whole motion

☐ Van Herk Margin, [15]

☐ other (please describe):

X-ray tracking: ☐ Yes

☐ No

☐ marker based

☐ ICD leads

☐ other (please name):

☐ other motion management strategies (please describe):



MRI guidance: ☐ Yes ☐ No

system:

- ☐ Philips
☐ Siemens
☐ GE

☐ other (please specify):

field strength

- ☐ 1.5 T
☐ 3 T

only ☐ MRI planning or ☐ combination with CT

Do you compensate the respiratory motion?

- ☐ Breath-Hold Technique
☐ Triggering (Prospective):
 ☐ Inspiration
 ☐ Expiration
☐ Gating (Retrospective)

Do you compensate the cardiac motion?

- ☐ Triggering (Prospective)
☐ Gating (Retrospective)

Which method do you use for triggering/gating?

- ☐ Image navigators
☐ Respiratory belt
☐ ECG signal
☐ PPU signal

Which sequences do you acquire for target visualization (e.g. LGE MRI)?

Do you administer contrast agent?

- ☐ Yes

Please specify type of contrast agent:

- ☐ No

Which sequences do you acquire for breathing and cardiac motion characterization?



About Cine MRI images, which type of sequences do you acquire?

- ☐ 2D
- ☐ 3D
- ☐ Single slice
- ☐ Multi Slice
- ☐ Breathhold
- ☐ Cardiac gated
- ☐ Free breathing real time

What type of imaging constrains do you apply for patients with CIED (SAR/SED/gradients)? Please describe:

Which type of controls do you have in place to verify functioning of CIED before/after MRI? Please describe:

Which personnel is present during MRI of CIED patients

- ☐ MRI technicians
- ☐ Radiologist
- ☐ Cardiologist
- ☐ Electrophysiologist
- ☐ Reanimation team

What kind of image artifacts compensation methods do you use for CIED related artifacts?

Which methods do you apply for patient life parameter monitoring during MRI?

If you use respiratory motion compensation:

How you guarantee that the patient is in the same respiratory phase or has the same breathing during treatment as in planning imaging?

- ☐ Training
- ☐ Monitoring
- ☐ automatic beam stop



- ☐ manual beam stop
☐ other (please describe):

48. Which treatment planning system do you use?

version number:

49. Which algorithm for dose calculation do you use?

- ☐ Type A
☐ Type B
☐ Monte Carlo

Does your algorithm consider lateral electron transport for correction of density inhomogeneities? ☐ Yes ☐ No

What grid size do you use for dose calculation?

- ☐ 1 mm
☐ 2 mm
☐ 3-4 mm
☐ other (please name): mm

50. Which radiation technique do you use for STAR?

- ☐ intensity modulated radiotherapy (IMRT)
☐ volumetric arc therapy (VMAT)
☐ three-dimensional conformal arc (DCA)
☐ CyberKnife
☐ Helical IMRT/tomotherapy
☐ other (please name):

Does your system allow non-coplanar beam directions? ☐ Yes ☐ No

51. Which treatment device(s) do you use for STAR treatments?

Is the functionality on the device audited? ☐ Yes ☐ No

In which time interval does it take place?

What entity is performing the audit?



What leaf width does your multileaf collimator (MLC) have near to the isocenter?

- ☐ ≤ 3 mm
☐ 5 mm
☐ no MLC used
☐ other:

If you use more than one kind of device, please name for every one:

52. How do you perform the patient re-positioning and alignment for treatment delivery?

- ☐ kV-imaging
☐ orthogonal x-ray images
☐ Exac Trac
☐ Exac Trac Dynamic
☐ CyberKnife integrated imaging system
☐ other (please name):

- ☐ MV imaging
☐ CBCT
☐ MRI
☐ Surface Guidance, e.g. Vision RT, C-RAD

system (please name):

Do you perform a daily quality control of the consistency of the isocenter of your used image guidance system with the treatment beam isocenter?

- ☐ Yes ☐ No

53. Are there national guidelines in your country which regulate dosimetry in radiotherapy?

- ☐ Yes
☐ No

54. Are there national guidelines in your country which regulate especially small field dosimetry in radiotherapy?

- ☐ Yes
☐ No

55. Do you perform an absolute dosimetric calibration of your treatment devices?

- ☐ Yes

According to which protocol:

- ☐ own specifications
☐ manufacturer specifications
☐ national guidelines
☐ international recommendations
☐ other (please name):

Which detector(s) do you use? (please name)



Which reference point do you use? (please describe)

☐ No

56. Do you calibrate your machine(s) according to small field dosimetry guidelines?

☐ Yes

What guidelines do you follow:

☐ IAEA- Dosimetry of small static fields- technical report vol. 483

☐ DIN 6809-8

☐ other: (please name):

Do you perform the small field dosimetry for absolute dose calibration?

☐ Yes

☐ No

Do you commission the output factors for different small field sizes?

☐ Yes

☐ No

Do you commission the dose cross profiles for different small field sizes?

☐ Yes

☐ No

Smallest field size generally for your device (if you use different devices for STAR, please name for each one):

☐ No

57. Is a regular dose audit performed in your radiation oncology department?

☐ Yes

due to national regulations?

☐ Yes

☐ No

especially also for stereotactic radiation?

☐ Yes

☐ No

Who performs the audit?

☐ internal auditor (please describe)

☐ external auditor

☐ specific auditing institution (please name)

☐ other (please describe)

☐ other (please describe)

Are there precise specifications which methods and parameters are checked in the audit?

☐ Yes



- ☐ national guidelines
☐ national society for medical physics
☐ other (please describe):

☐ No

☐ No

59. Do you perform an End-to-End test specifically for SBRT?

☐ Yes

☐ with or ☐ without a moving phantom

Which phantom do you use? (please name):

intervals:

- ☐ daily
☐ weekly
☐ monthly
☐ quarterly
☐ yearly

☐ other (please name):

What is the maximum geometric inaccuracy you would accept for three-dimensional spatial dose placement?

- ☐ 1 mm
☐ 1,25 mm
☐ 1,5 mm

☐ other (please name):

mm

What is the maximum dosimetric difference you accept in point-dose measurements compared to the plan within the TV?

- ☐ max. 2 %
☐ max. 3 %
☐ up to 5 %

☐ other (please name):

%

☐ No

60. Do you perform a Winston Lutz Test?

☐ Yes

intervals:

- ☐ daily
☐ before SBRT
☐ monthly

☐ other (please name):

☐ No



61. Do you perform a regular check of the geometric and dosimetric accuracy?

- ☐ Yes:
according to
- ☐ system-specific guidelines
 - ☐ own defined guidelines
 - ☐ national guidelines
 - ☐ international recommendations
 - ☐ other (please name):

☐ No

63. Is there an inspection of the quality assurance at your radiation facility?

- ☐ Yes
by an:
- ☐ internal institution
 - ☐ independent institution
 - ☐ other (please name):

☐ No

64. Do you carry out regular metrological audits?

☐ Yes

What exactly is being tested? Please describe.

☐ No

65. Do you perform patient-specific plan verification?

☐ Yes

for every plan?

- ☐ Yes, for all
- ☐ only for intensity modulated techniques
- ☐ No

How do you perform the verification?

- ☐ Film
- ☐ EPID
- ☐ Phantom based
 - ☐ Detector
 - ☐ Array
 - ☐ 4D

☐ other (please name):



How do you perform the evaluation?

☐ point-dose measurement

☐ gamma analysis

used gamma criterion: %/ mm

☐ other (please describe):

☐ No

In which condition e.g. CyberKnife TG 135?

66. Do you perform an offline review e.g. error assessment after treatment?

☐ Yes

☐ regular

☐ in-frequent

☐ No

67. Do you perform any form of post-treatment analysis in order to estimate real delivered dose and to compare it with predicted dose?

☐ Yes

☐ No

Does your equipment include any options allowing download, process and/or analyze on-treatment data (on-treatment images, treatment log files, transmission dose/fluence data, respiratory phase monitoring data, etc.)?

☐ Yes

Please specify.

data available:

process/analyze software infrastructure:

analysis output/interpretation:

☐ No



European Commission
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Number 945119 – STOPSTORM



COMMENTS AND REMARKS



REFERENCES

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