

QART at EORTC

Akos Gulyban

medical physicist

RTQA manager

EORTC Headquarters

Coen Hurkmans

clinical physicist

EORTC Radiation Oncology Group

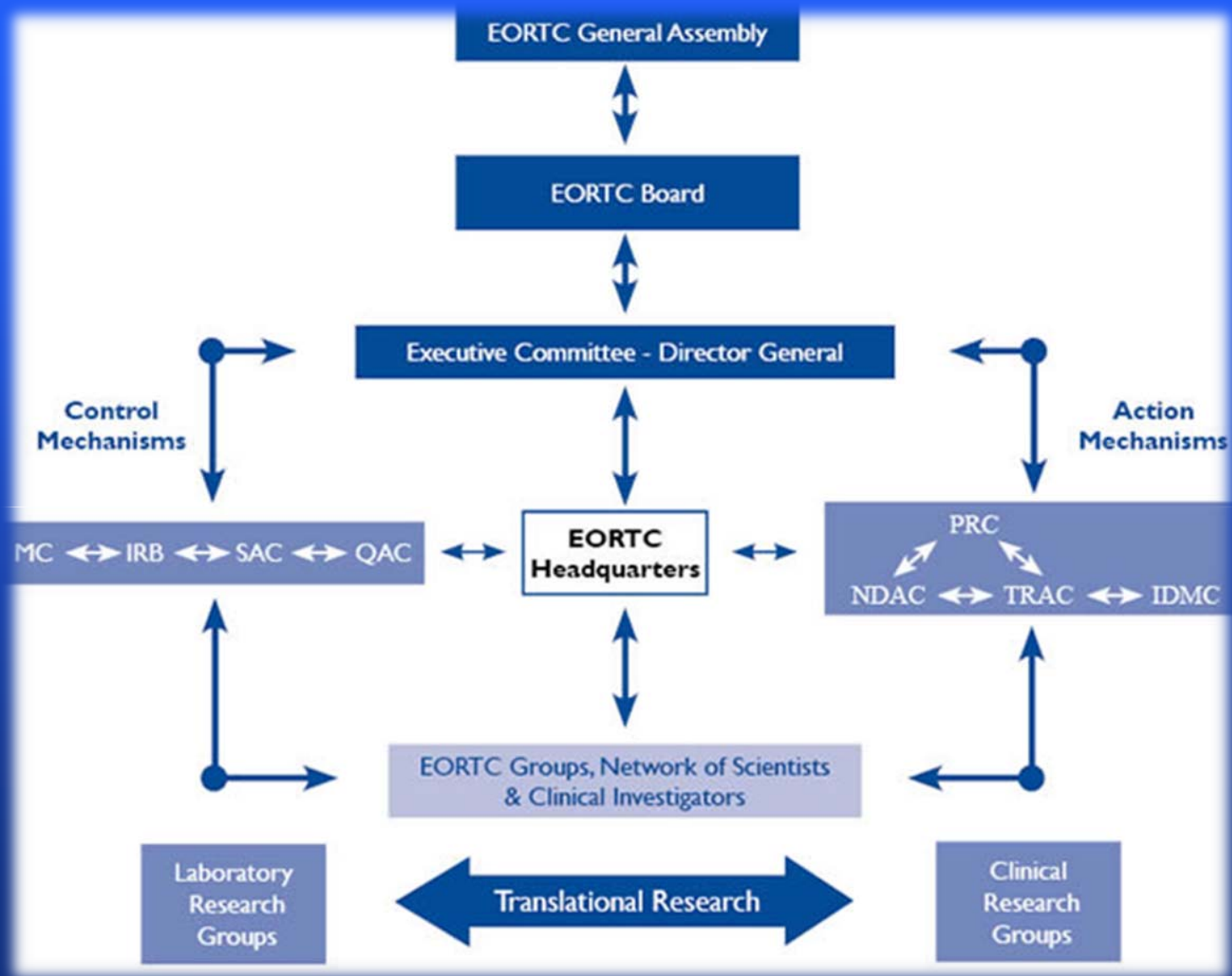
Executive Committee member

QART committee member

ATC / RTOG Meeting

2009 January, New Orleans, LA, USA

EORTC structure and network



EORTC
Headquarters

& other

Disease Oriented Groups

**Brain Tumor
Group (BTG)**

**Breast Cancer
Group
(BCG)**



**Collaboration with other
Disease Oriented Groups
(by WP chairs)**

Radiation Oncology Group (ROG)

ROG Executive Committee

ROG Steering Committee
Website, PR, Membership, Publication,
Radiotherapy Technologist

**QART
Committee**

Working Party
Brain, Head&Neck, Breast, Lung, GU, GI,

**Individual ROG members
(in EORTC members institution)**

**EORTC
Headquarters**

HQ QART

**EORTC trial with
radiotherapy**

**QART team =
ROG + HQ QART**

**EORTC
Radiation Oncology Group**

QART committee

Full-time employed at HQ

- EvdS fellow (radiation oncologist)
- QART manager (medical physicist)

■ Main responsibilities

- Coordination
- Preparation
- Organization
- Report

Professional volunteers

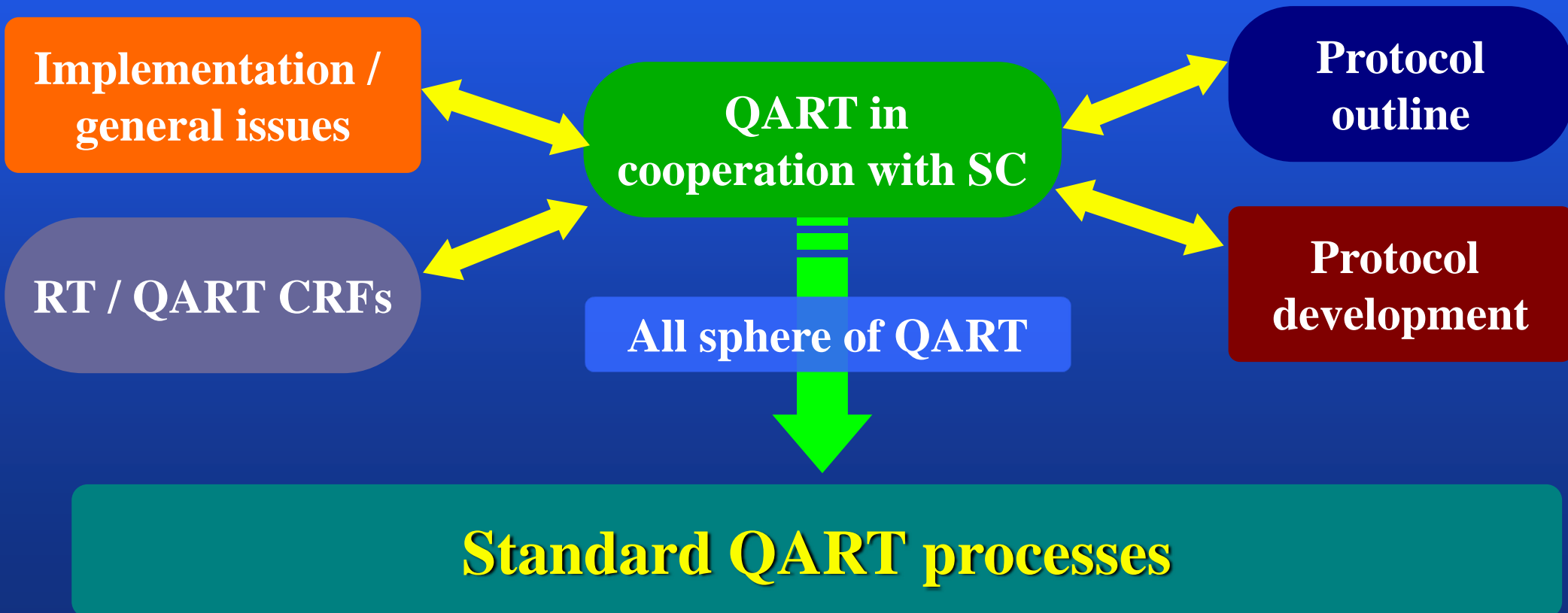
- 3 radiation oncologist
- 4 medical physicist
- 1 radiation technologist

■ Main responsibilities

- Expert opinion
- Determination of QART level
- Validation / finalization

“All roads lead to QART...”

- A binome is formed at start of each project
 - Are member of the ROG QART
 - HQ QART (EvdS fellow, QART manager)



Definition of the QART levels

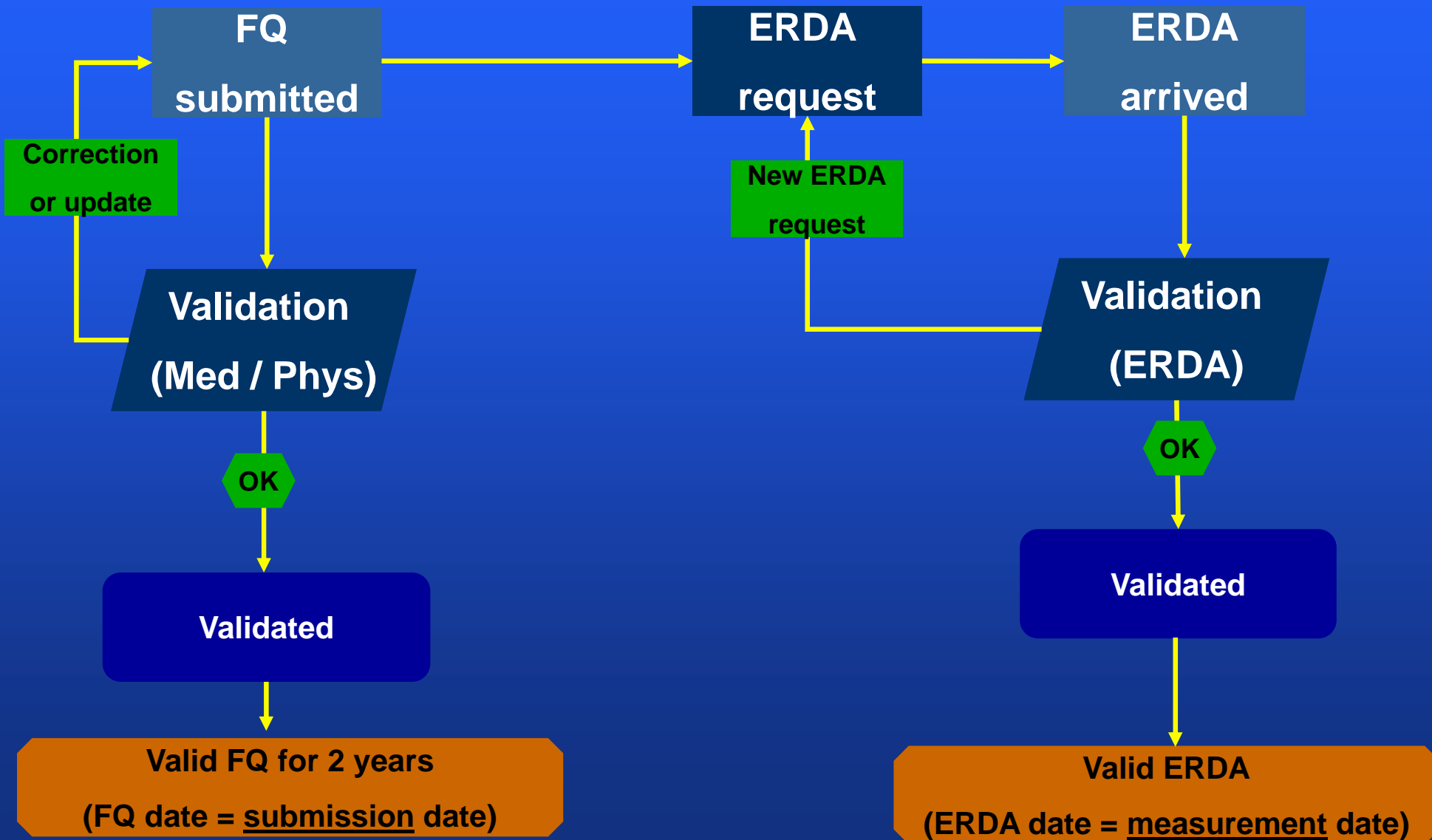
- **Level 1 (minimal requirement, included in all levels)**
 - **EORTC Facility Questionnaire and External Reference Dosimetry Audit**
 - **Trial specific Questionnaire (if necessary)**
- **Level 2**
 - **Dummy Run / Dry Run exercise and validation**
- **Level 3**
 - **Limited Individual Case Review (~20% of treated patients)**
- **Level 4**
 - **Extended Individual Case Review (majority or all randomized patients)**
- **Level 5**
 - **Complex dosimetry check (phantom study)**
- **Reference document endorsed by QART and ROG**

- **The defined QART level is depending on**
 - **How complex is the RT component within the trial**
 - **Phase of the trial**
 - **Available grant (academic, sponsored)**
 - **Aimed population**

- **Credential Questionnaire to evaluate**
 - **RT equipment (min: two MV equipment with EPID)**
 - **Human workload (max / year: 300 pts / rad. onc. + 500 pts / physicist)**
- **ERDA = independent dosimetry output check (< 3% error allowed)**
- **Mandatory for ROG membership**
- **Web-based system (submission, update and validation)**

No	New	Center	City	Med	Phys	FQ Validated	ERDA	Last ERDA date	Last ERDA phot.	Last ERDA elec.	Comments
101	No			✓	✓	28/05/2008	✓	28/05/2008	2008		View - Update Summary - Old - Copy FQ reminder sent on 01/01/08 Review pending ERDA requested on 30/02/00
104	No			✓	✓	28/07/2008	?	28/07/2008	2007		View - Update Summary - Old - Copy
109	No			✓	✓	21/06/2007	!	21/06/2007			View - Update Summary - Old - Copy
114	No			✓	✓	13/08/2007	✓	13/08/2007	2007	2007	View - Update Summary - Old - Copy

QART level 1 - Validation process

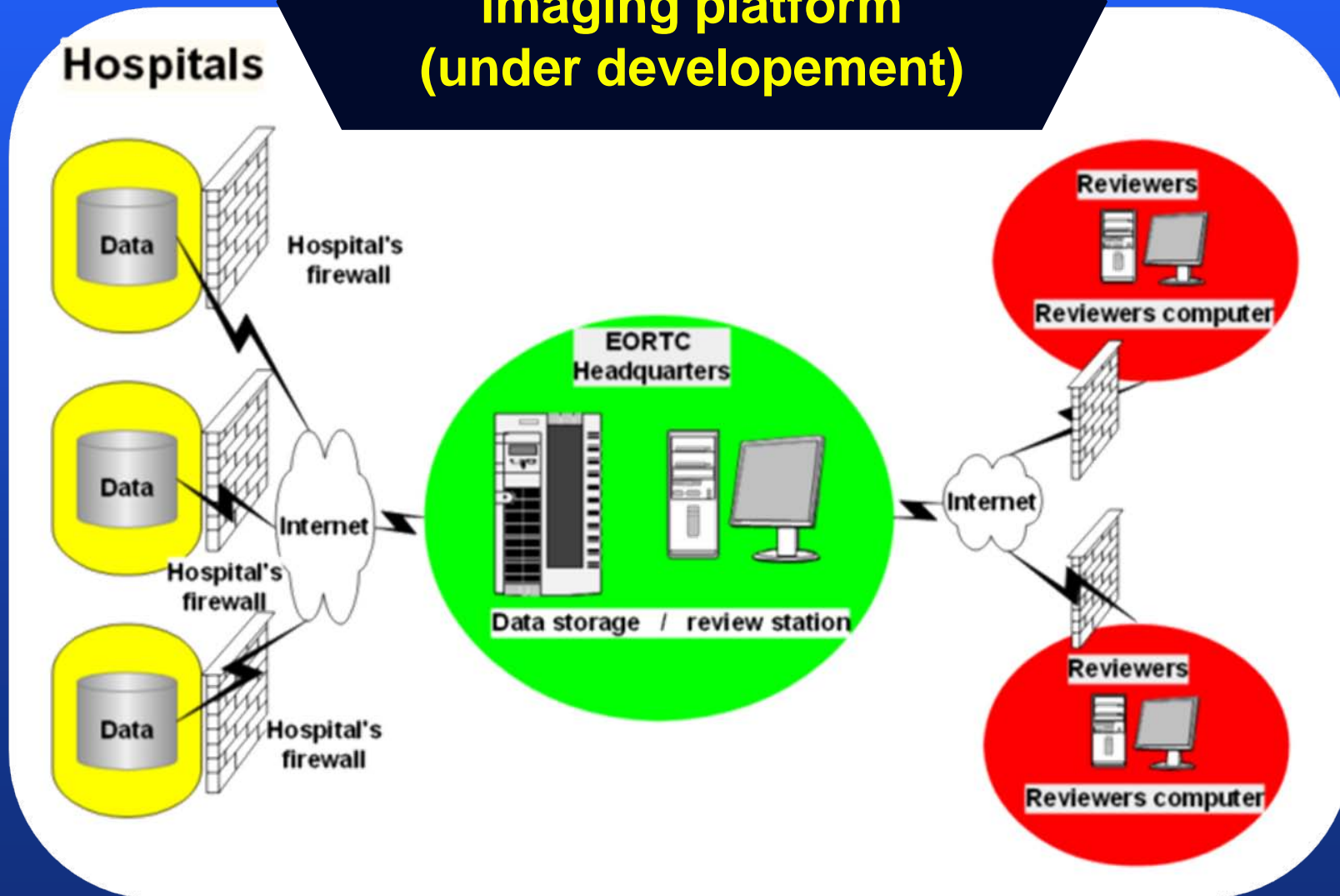


- **Dummy/Dry Run is a “clinical case exercise before the site authorization or in the very early phase of the study**
- Evaluation through elected QART expert(s)
- Ongoing studies with DR program
 - 22033 Low grade glioma (partly DICOM-RT based, with FTP transfer)
 - 22042 Meningeoma (through the ATC/ITC)
 - 22051 Supremo (breast)
 - 22055 LungART (through EQUAL-ESTRO)
- Forthcoming studies
 - 22042 adjuvant prostate
 - 22082 glioma

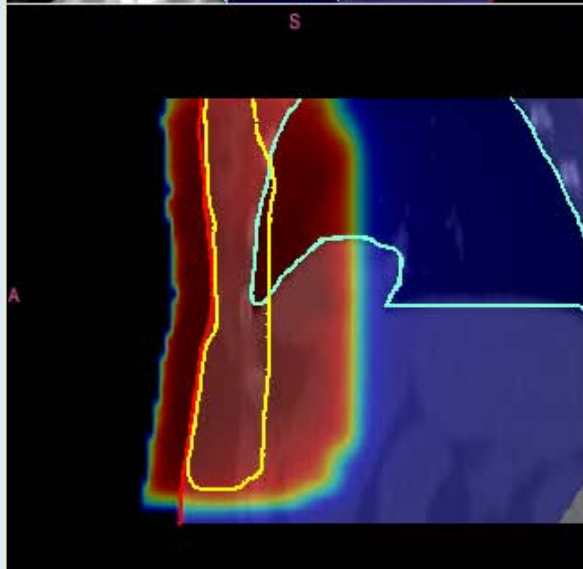
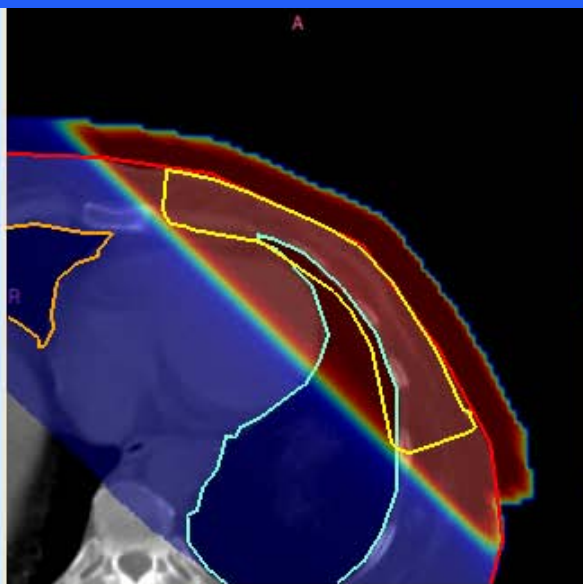
- **Individual Case Review** ensures an independent evaluation of the patient RT treatment plan in a specific study.
- Evaluation through QART radiation oncologist + medical physicist experts mainly during the group meetings
- **Ongoing studies with limited number of ICR**
 - 22054 CATNON (brain) (hardcopy, screen grab based)
- **Ongoing study with extended number of ICR**
 - 22042 Meningeoma (through the ATC/ITC)
- **Forthcoming studies**
 - Adjuvant pancreas ? (RTOG-EORTC collaboration)

- **Complex dosimetry check through phantom irradiation**
 - Partly combined with several site visits
 - Evaluation of the complete radiotherapy workflow
 - Partly covering educational purposes
 - It was once introduced in the frame of EORTC trials
 - ◆ Opera phantom was used in the 22991 trial by Sigma7 to verify the few centers introducing IMRT
- QART committee consider the on-site visits, if it is necessary on the basis of previous DR/ICR concerns
- Forthcoming studies
 - Adjuvant pancreas ? (RTOG-EORTC collaboration)

The EORTC imaging platform (under development)



VODCA: QART central review



VODCA - Visualisation and Organisation of Data for Cancer Analysis

TEST126 Study Data Analysis

Drag a column header here to group by that column

Checks					Therapy Data																				
PATID	PD	CD	TD	Active	Name	Type	DoseCube	Vol-Surf	RD	Fract	MIN	MAX	ME	SD	Integr	TRT	RGRP	IBB	PBB	RBF6	RBF12	RBF24	TNTRT	NFR	
2006	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Bladder	DSH	Plan1	240.055313	70	35	1.594091	70.84604	32.669647	25.3574	0	1	1	1	1	1	1	1	1	1006	37
2006	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	LFemHead	DSH	Plan1	63.962051	70	35	3.372666	44.89474	23.236712	11.7535	0	1	1	1	1	1	1	1	1	1006	37
2006	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	ProstatePTV	DSH	Plan1	238.401321	70	35	63.95611	71.04851	68.296165	1.18570	0	1	1	1	1	1	1	1	1	1006	37
2006	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	RFemHead	DSH	Plan1	53.496063	70	35	8.548039	56.55733	34.686707	10.6973	0	1	1	1	1	1	1	1	1	1006	37
2006	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Rectum	DSH	Plan1	87.266312	70	35	36.03348	70.19852	55.652313	12.3472	0	1	1	1	1	1	1	1	1	1006	37

(PATID equals 2006) and (Type equals DSH)

Load Filtered Data | Load DSM | Clear all Data | Save Chart | Load Chart

Differential Abs. | Differential Rel. | Cumulative Abs. | **Cumulative Rel.** | DSM

Av, Hi, Low | Dose Value Extraction

View | Dose | Value | Add | Export Table | Hide Table | Clear

Chart | Series | Data | Tools | Export | Print

Series | General | Axis | Titles | Legend | Panel | Paging | Walls

- 1_2006_Bladder_DSH
- 2_2006_LFemHead_DSH
- 3_2006_ProstatePTV_DSH
- 4_2006_RFemHead_DSH
- 5_2006_Rectum_DSH
- Average
- High
- Low

1_2006_Bladder_DSH: 39.9118 - 35.589

Database Connected | User: TU26 | User Privileges: Superuser

Series Name	X(45)	X(80)	Y(30)
1_2006_Bla	36.2902511	47.1904788	54.895378
2_2006_LFe	28.0038727	9.45470225	39.238597
3_2006_Pro	68.8458816	67.6537153	100
4_2006_RFe	36.2317146	29.8607824	77.774971
5_2006_Rec	61.7243136	42.6412534	100

- **Acquisition of VODCA software**
 - **Vodca RT + Vodca DB**
 - **DICOM-RT based central review capability**
 - **Upgrade of existing web-based data transfer framework**
 - **Clear FDA and clinical validation plan**
- **We are ready to perform central QART review**
 - **ATC/ITC – EORTC/VODCA cross-check collaboration?**
- **New studies / challenges:**
 - **22043: adjuvant prostate**
 - **22081: glioma**
 - **Adjuvant pancreas ? (RTOG-EORTC collaboration)**

ROG Executive Committee



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(Leuven)
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SECRETARY

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ADMINISTRATOR



Coen Hurkmans
(Eindhoven)
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