

# IMRT WORKSHOP



# Presentation

- Company
- QAMLog
- ?



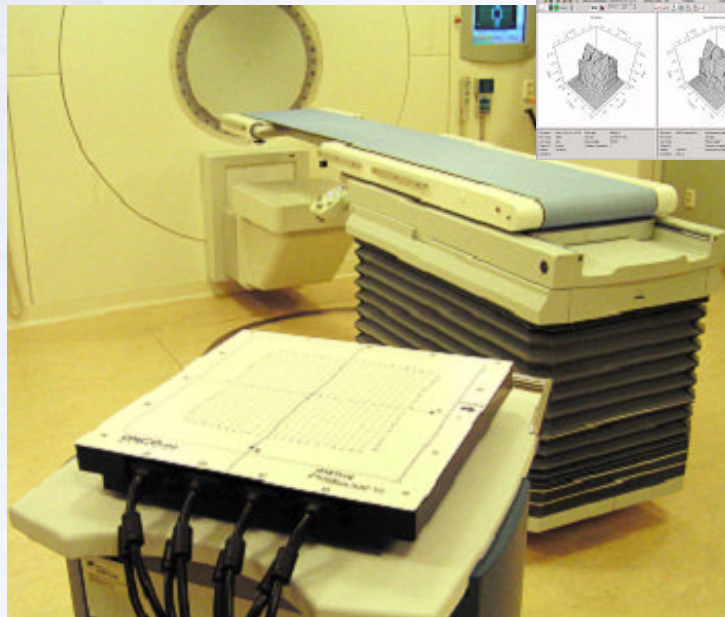
# ONCOlog Medical

Uppsala Sweden

Provides Products & Services

for

## Quality Assurance in Radiation Oncology & Patient Logistics



**Ragnar A Sjukling**  
091212121212 | 020459232323

General information | Family contact | Medical history

General information	Patient name
Patient ID: 11112321212	Last Name: Sjukling
PINo: CSD1920121819	First Name: Ragnar
Gender: Male	Mobile number: A
Birth date: 1912-12-12	Title:
Actual age: 98 years	Previous Name:
PatID2:	Patient address: Postal address: Sweden 1111

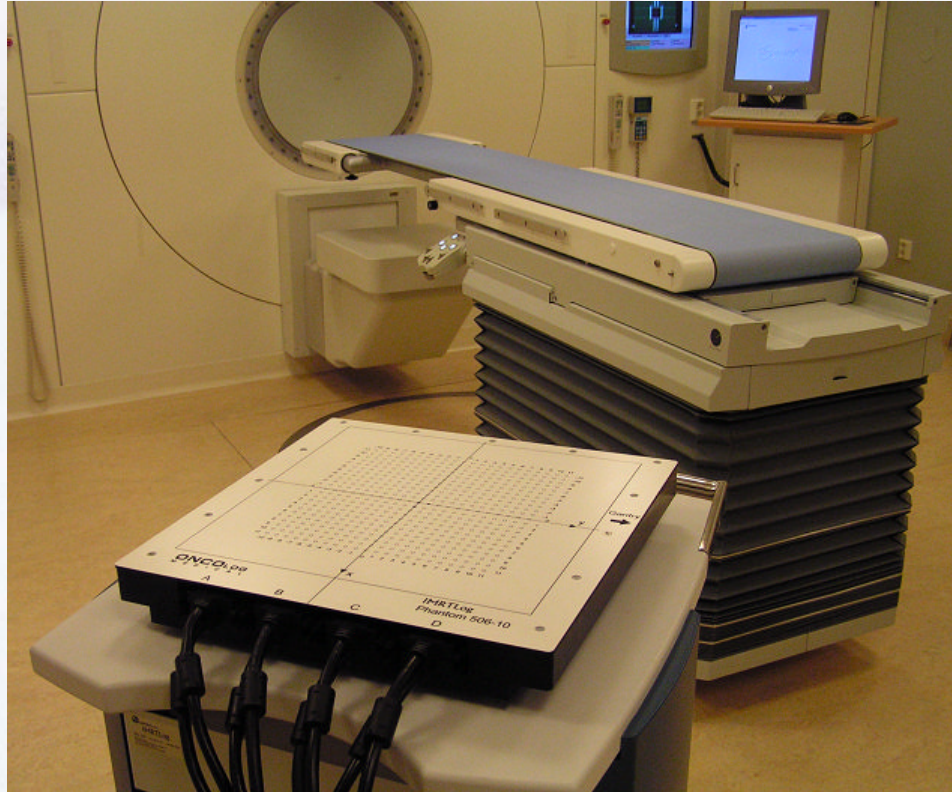
**MachLog**

- Document database
- Company registry
- Equipment registry
- QA Activity scheduler
- Periodic Checks & Measurements
- Data analysis module
- Adverse Events database
- Improvements and suggestions
- Benchmarking
- Invoicing
- All views

Company name	City	Phone switch board
<input type="checkbox"/> Elekta Instrument AB	STOCKHOLM	+46 8 587 254 00
<input type="checkbox"/> Linnéuniversitet Sundsvall-Härnösand	SUNDSVALL	060 - 181 000
<input type="checkbox"/> ONCOlog Medical QA AB	UPPSALA	+46 18 19 45 65
<input type="checkbox"/> PTW Physikalisches Technische Werkstätten Dr. Pöschel GmbH	FREIBURG	+49 761 490 55 0
<input type="checkbox"/> RADEQ	HEDEMORA	0225-77 12 50
<input type="checkbox"/> Siemens Elema AB	SOLNA	08-730 7000
<input type="checkbox"/> TomoTherapy Inc.	MADISON	+1 608 824 2800
<input type="checkbox"/> VARIAN Medical Systems Scandinavia AS	HERLEV	+45 - 44 50 01 00



# QAMLog IMRT



## Detectors:

*Semiconductor detectors: 2D array.*

(pre-irradiation 25 kGy, sensitivity change <math><0.2\%</math> per kGy).



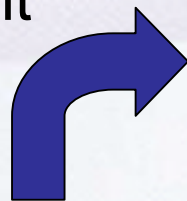


# Workflow

## How to perform IMRT QA ?

QA-plan  
treatment  
data

TPS



MLC- and  
dose data



R&V  
system

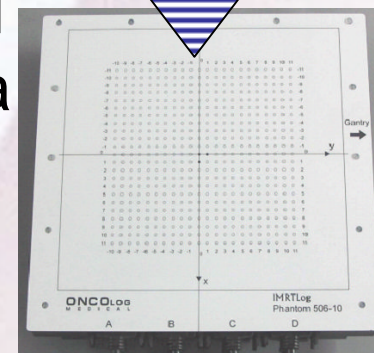
Accelerator  
and MLC



Beam

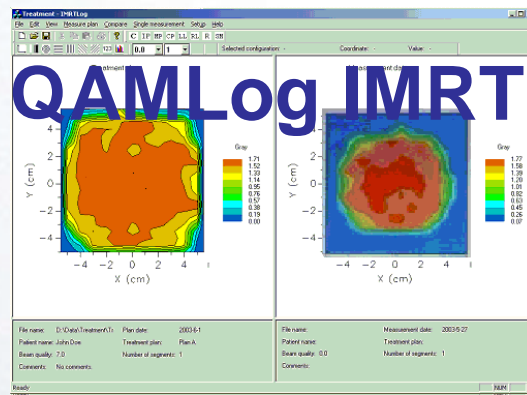


Measured  
dose data



QAMLog IMRT phantom

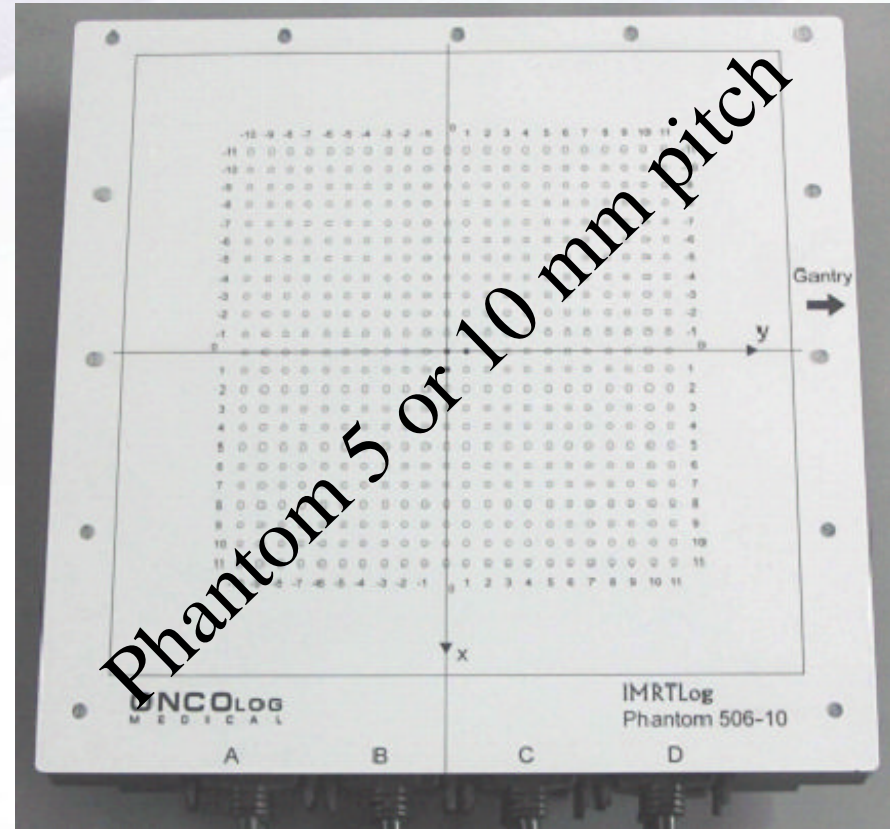
QA-plan  
dose data



Dose comparison

# QAMLog IMRT

Trolley with electronics



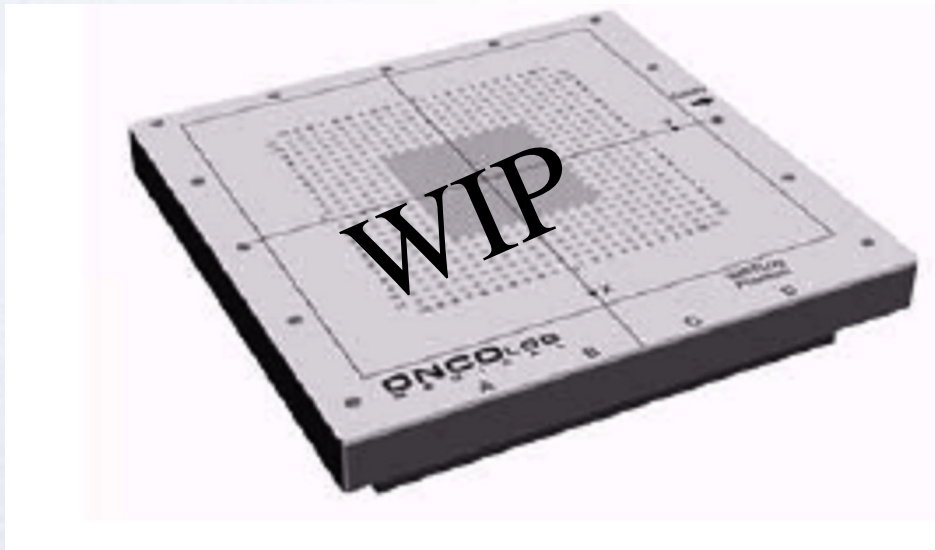


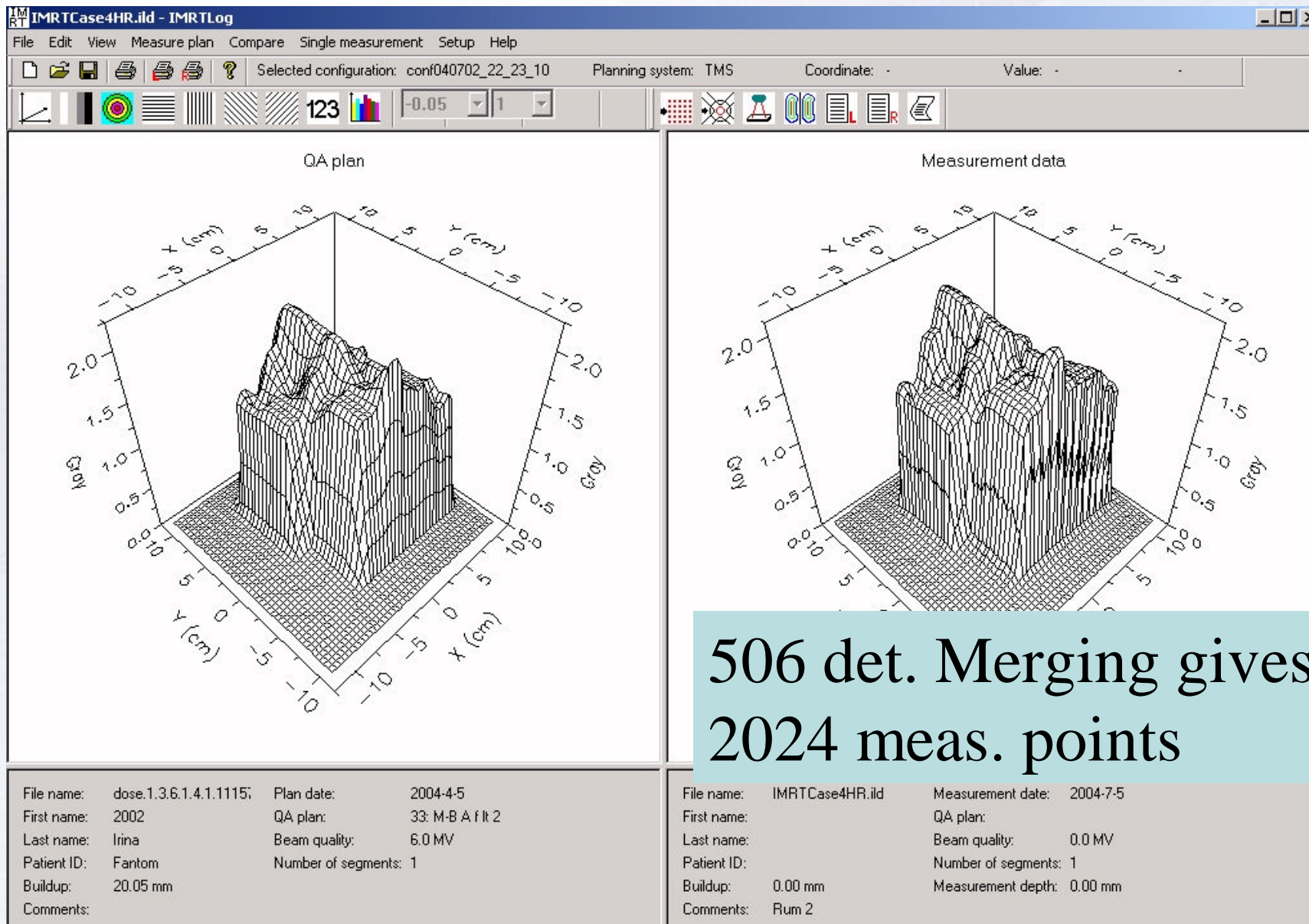
# QAMLog IMRT

New Phantom:

10 mm pitch

5 mm pitch in central area

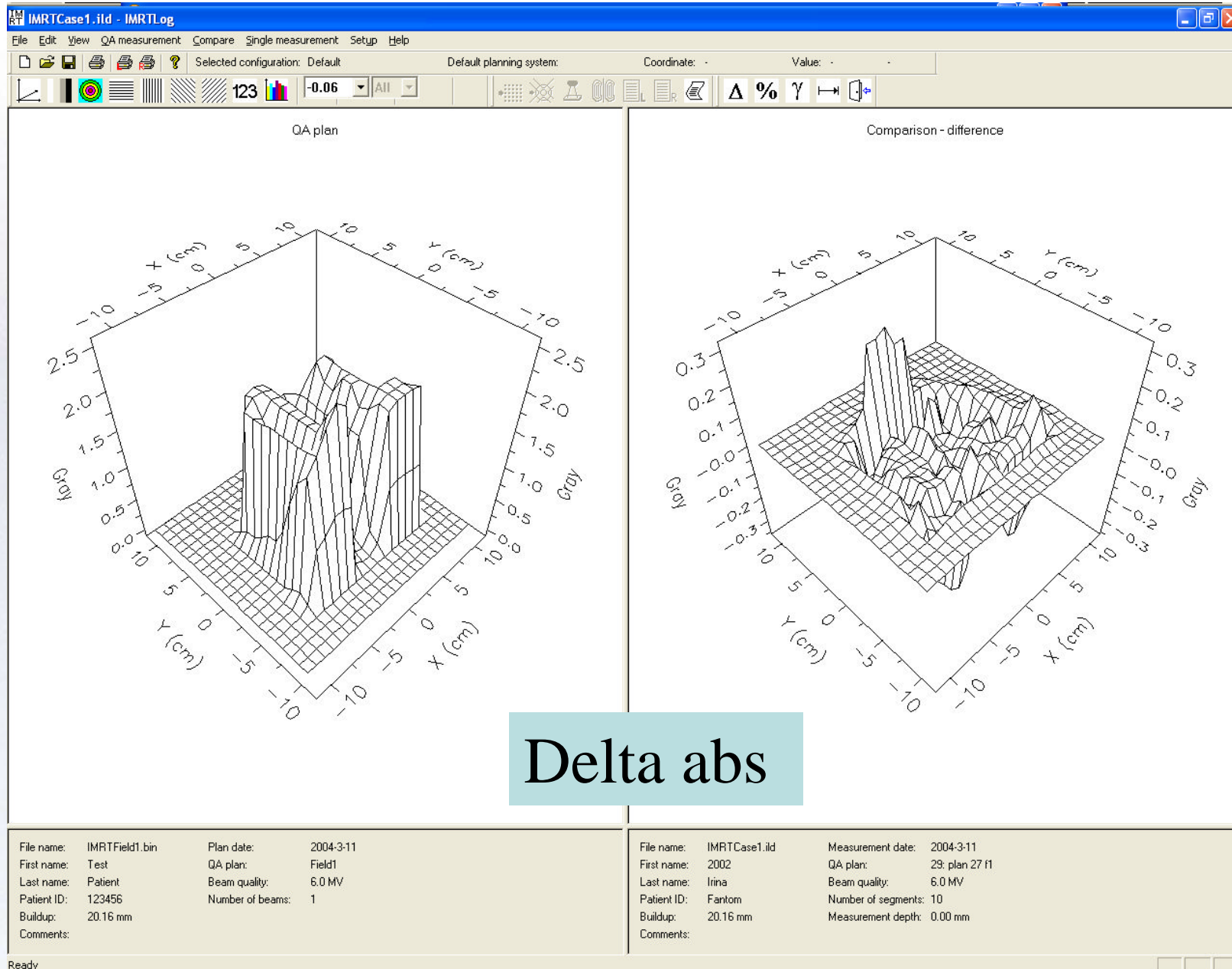




# QAMLog IMRT

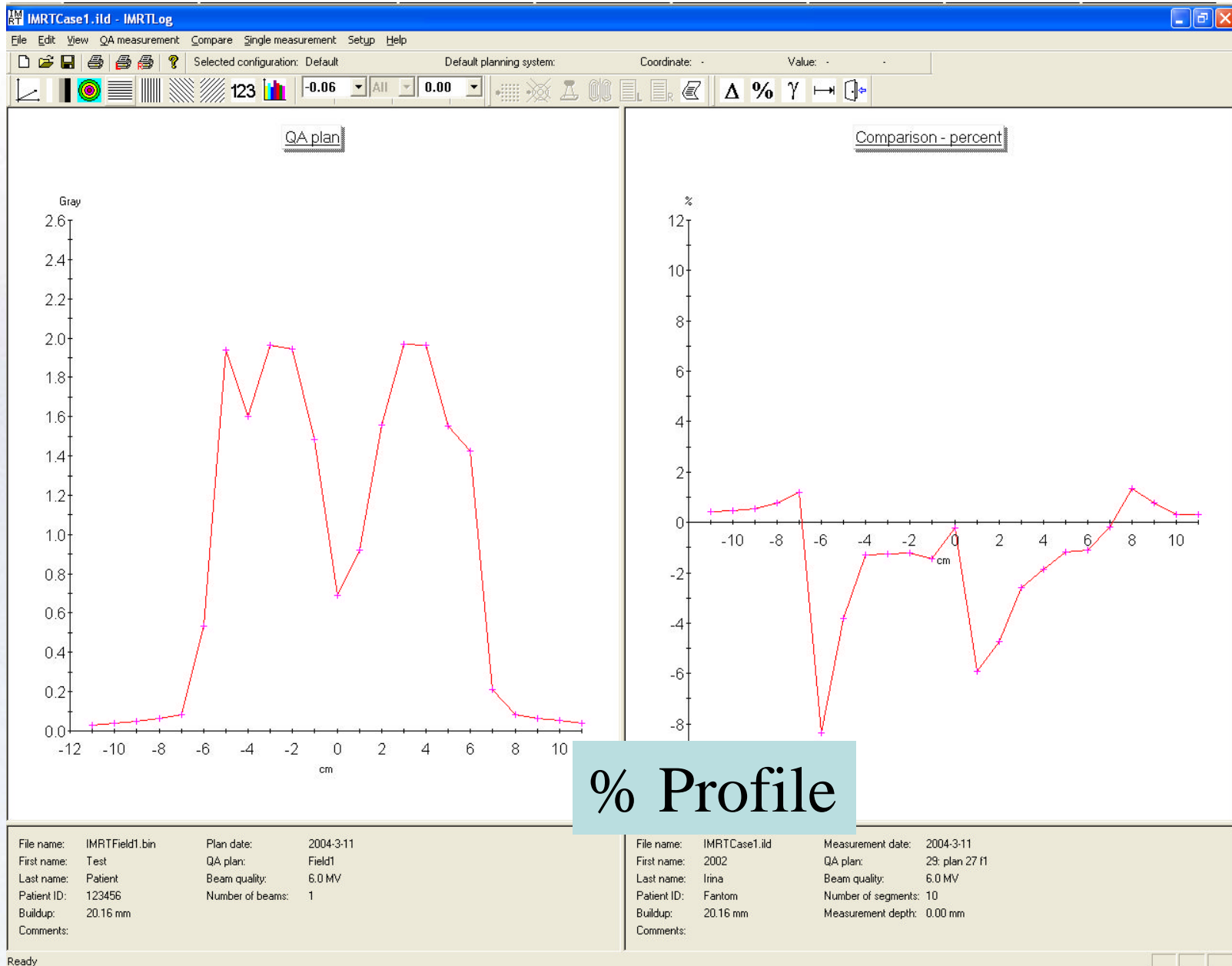






# QAMLog IMRT

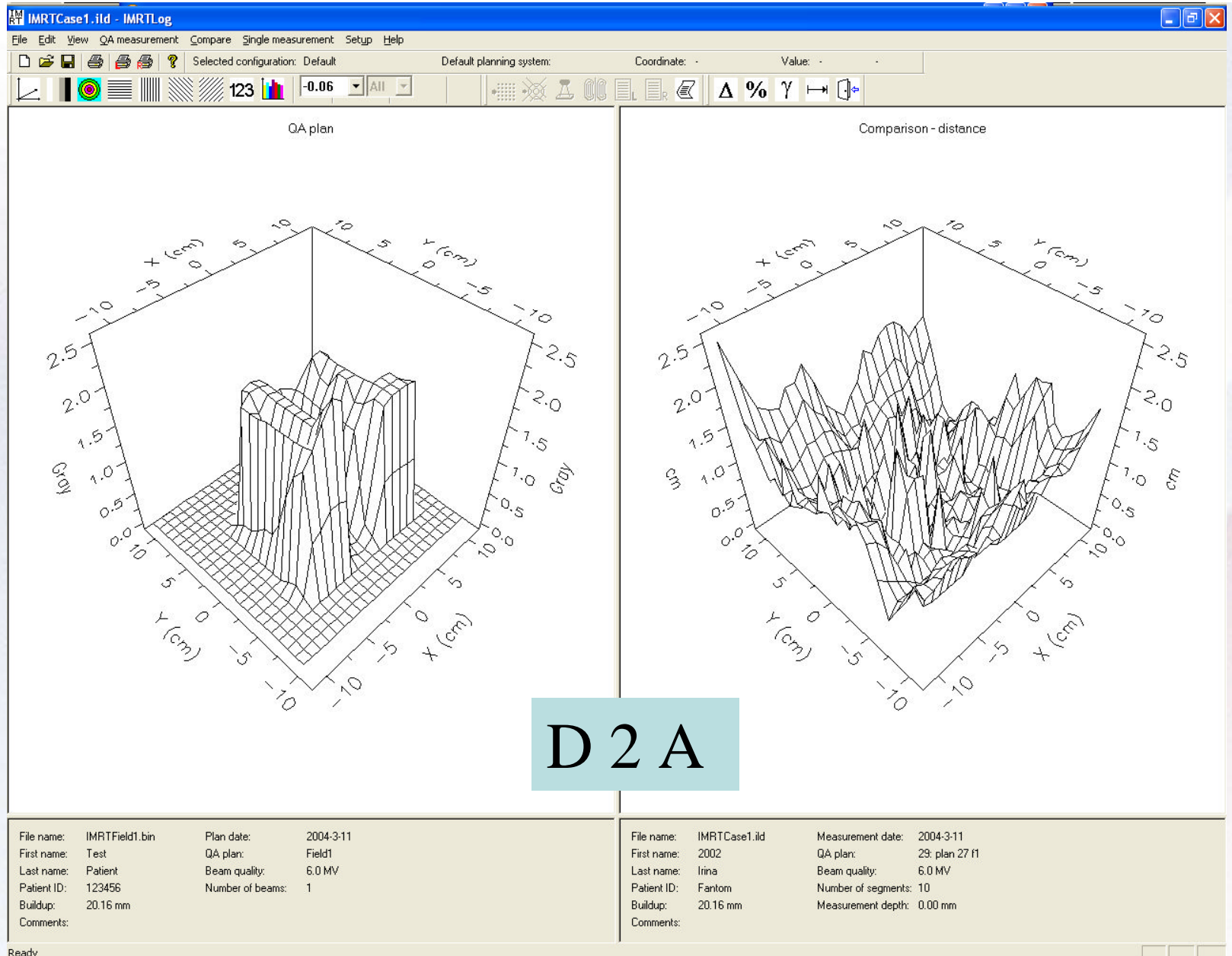




# QAMLog IMRT

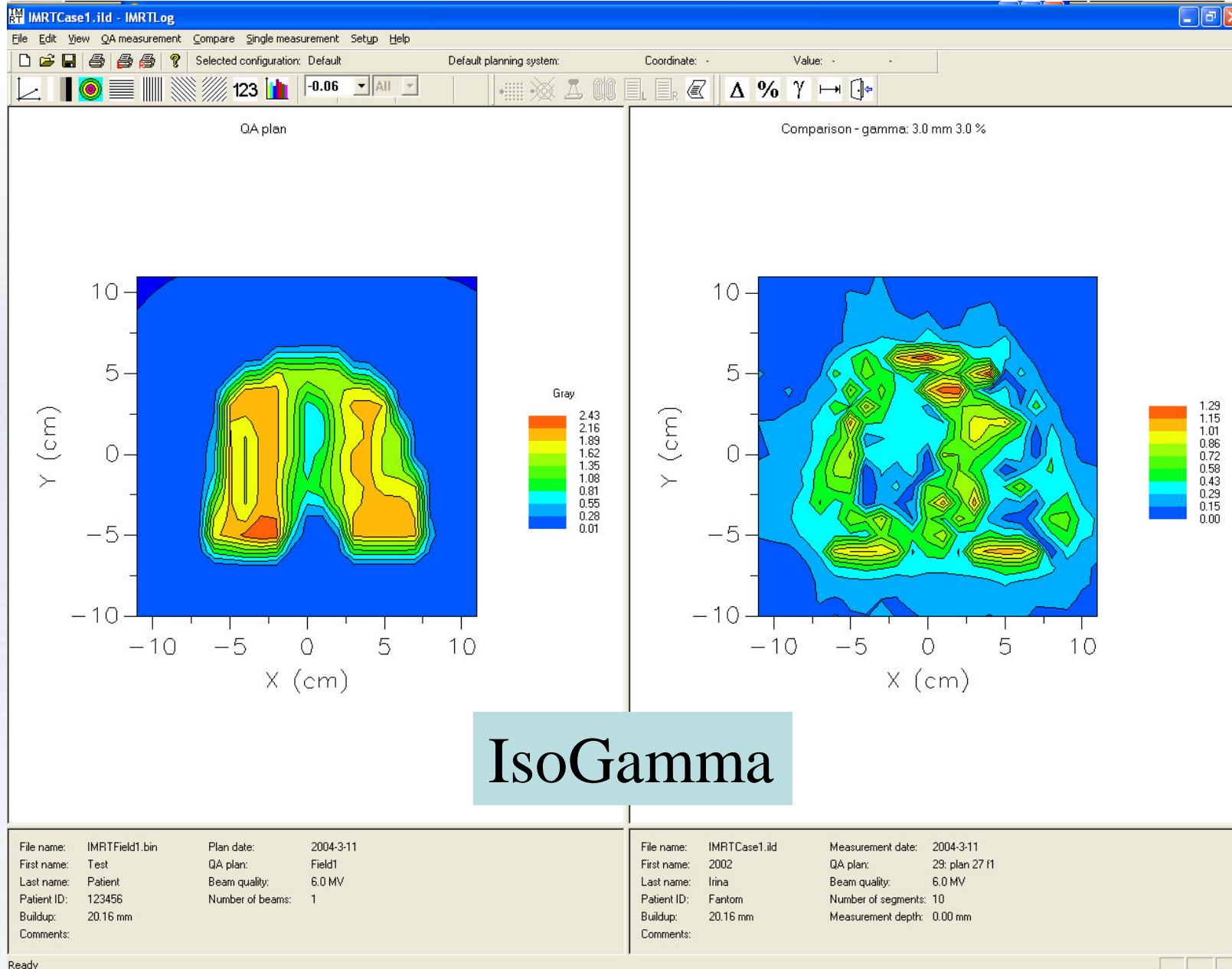






# QAMLog IMRT



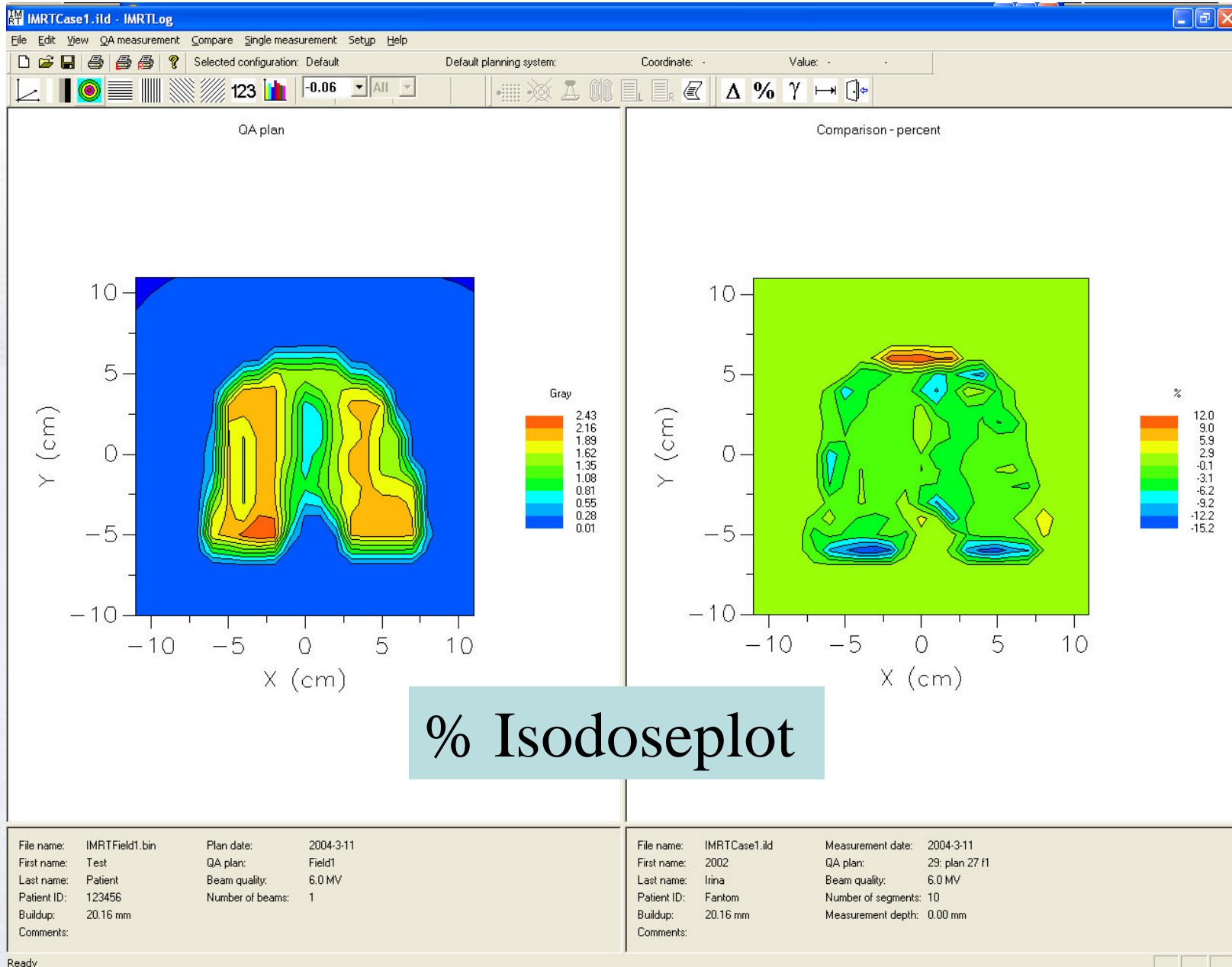


# IsoGamma

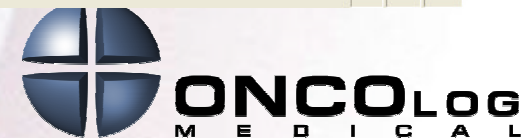
# QAMLog IMRT

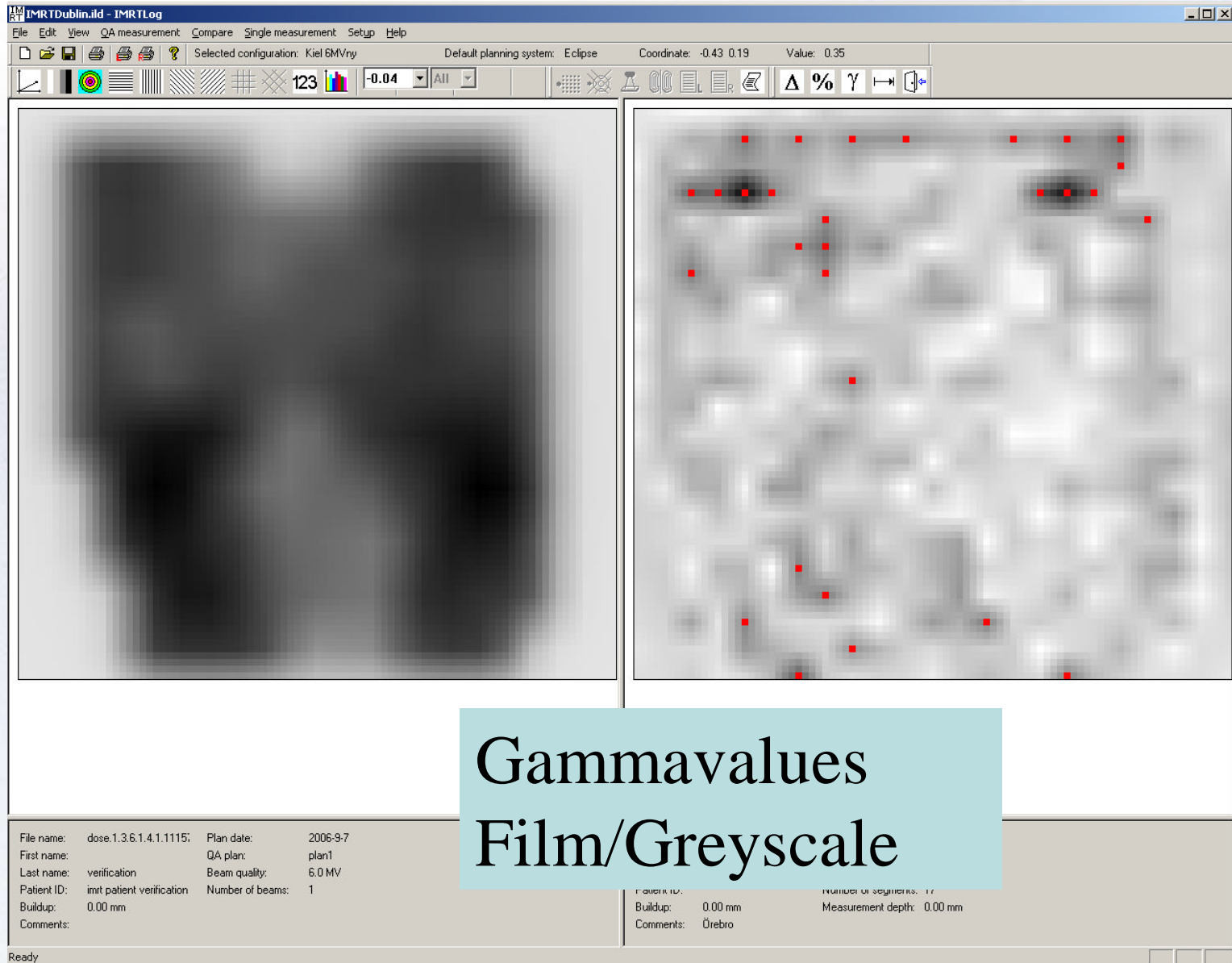






# QAMLog IMRT





## Gammavalues Film/Greyscale

# QAMLog IMRT





IMRTCase1.ild - IMRTLog

File Edit View QA measurement Compare Single measurement Setup Help

Selected configuration: Default Default planning system: Coordinate: Value:

123 -0.06 All

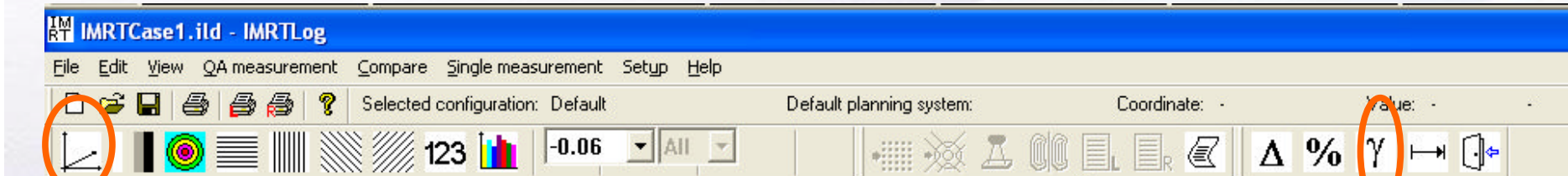
cm	-11.0	-10.0	-9.0	-8.0	-7.0	-6.0	-5.0	-4.0	-3.0	-2.0	-1.0	0.0	1.0	cm	-11.0	-10.0	-9.0	-8.0	-7.0	-6.0	-5.0	-4.0	-3.0	-2.0	-1.0	0.0	1.0
11.0	0.007	0.008	0.009	0.011	0.012	0.011	0.012	0.013	0.014	0.019	0.019	0.019	0.0	0.302	0.256	0.250	0.284	0.275	0.368	0.362	0.452	0.478	0.296	0.299	0.267	0.	
10.0	0.008	0.010	0.012	0.014	0.016	0.015	0.017	0.017	0.017	0.023	0.026	0.026	0.	10.0	0.255	0.213	0.275	0.298	0.335	0.427	0.484	0.455	0.533	0.375	0.263	0.307	0.
9.0	0.010	0.012	0.015	0.019	0.021	0.022	0.023	0.025	0.027	0.032	0.035	0.036	0.	9.0	0.283	0.369	0.281	0.265	0.318	0.405	0.490	0.600	0.568	0.451	0.342	0.397	0.
8.0	0.013	0.017	0.021	0.026	0.030	0.031	0.033	0.037	0.040	0.046	0.050	0.051	0.	8.0	0.242	0.245	0.284	0.268	0.269	0.371	0.574	0.606	0.591	0.564	0.545	0.871	0.
7.0	0.017	0.022	0.029	0.035	0.041	0.045	0.047	0.055	0.058	0.065	0.070	0.071	0.	7.0	0.320	0.191	0.149	0.196	0.238	0.327	0.607	0.786	1.018	0.941	0.882	1.077	0.
6.0	0.019	0.026	0.035	0.043	0.052	0.063	0.068	0.079	0.153	0.752	0.777	0.781	0.	6.0	0.310	0.380	0.256	0.272	0.307	0.809	1.316	1.846	3.316	11.109	11.183	11.989	9.
5.0	0.023	0.030	0.038	0.049	0.062	0.079	0.175	0.917	1.031	1.682	1.523	1.523	1.	5.0	0.512	0.389	0.372	0.453	0.434	1.527	0.969	-5.903	-6.076	-3.136	-1.827	-2.834	-E
4.0	0.024	0.032	0.042	0.055	0.068	0.174	1.013	1.956	1.997	1.953	1.514	1.156	1.	4.0	0.381	0.427	0.485	0.389	0.712	-0.723	-8.679	-4.251	-2.302	-1.778	-1.113	-6.520	-E
3.0	0.026	0.035	0.045	0.058	0.074	0.283	1.901	2.003	2.003	1.955	1.490	0.688	0.	3.0	0.405	0.374	0.441	0.510	0.817	-1.776	-4.467	-3.868	-1.677	-0.942	-1.273	0.650	-E
2.0	0.027	0.035	0.046	0.060	0.077	0.286	1.890	1.823	1.986	1.952	1.489	0.662	0.	2.0	0.470	0.480	0.579	0.696	1.126	-1.054	-3.711	-1.911	-1.344	-1.292	-1.532	1.355	-C
1.0	0.028	0.036	0.047	0.064	0.080	0.393	1.905	1.600	1.964	1.946	1.487	0.664	0.	1.0	0.434	0.524	0.598	0.584	1.175	-1.525	-2.982	-0.691	-0.858	-1.189	-1.394	1.392	-1
0.0	0.028	0.037	0.049	0.065	0.082	0.531	1.939	1.600	1.962	1.944	1.482	0.689	0.	0.0	0.425	0.482	0.543	0.752	1.196	-8.362	-3.806	-1.280	-1.237	-1.211	-1.425	-0.214	-E
-1.0	0.027	0.036	0.049	0.064	0.082	0.533	1.941	1.601	1.964	1.932	1.267	0.692	1.	-1.0	0.558	0.570	0.628	0.996	1.506	-7.215	-3.229	0.032	-1.004	-0.631	-2.620	-0.037	-2
-2.0	0.027	0.036	0.049	0.064	0.082	0.792	1.943	1.601	1.965	1.924	1.107	0.889	1.	-2.0	0.665	0.604	0.714	0.922	1.639	-6.201	-2.438	0.027	-0.689	-1.054	-0.261	-3.297	-3
-3.0	0.027	0.035	0.048	0.063	0.086	1.285	1.943	1.598	1.967	1.930	1.090	0.586	0.	-3.0	0.560	0.696	0.820	1.110	2.011	-1.161	-1.885	0.215	-0.701	-0.401	0.535	-4.208	-E
-4.0	0.023	0.032	0.046	0.060	0.178	1.669	1.957	1.832	2.220	2.170	1.084	0.194	0.	-4.0	0.660	0.767	0.882	1.042	-1.134	1.201	-2.270	-3.424	-4.169	-2.985	0.459	3.731	1.
-5.0	0.026	0.035	0.046	0.060	0.249	1.829	1.993	2.240	2.430	2.329	0.654	0.146	0.	-5.0	0.493	0.537	0.643	1.041	-4.569	-2.048	-3.478	-3.996	-3.246	-1.779	-4.035	2.114	2.
-6.0	0.024	0.031	0.041	0.051	0.150	0.922	1.016	1.215	1.224	1.159	0.180	0.087	0.	-6.0	0.325	0.350	0.351	0.577	-2.328	-9.763	-11.994	-14.275	-15.245	-12.264	-0.842	1.553	1.
-7.0	0.020	0.026	0.033	0.040	0.049	0.053	0.059	0.065	0.069	0.070	0.063	0.060	0.	-7.0	0.114	0.197	0.279	0.365	0.647	1.162	1.358	1.496	1.421	1.184	1.145	0.974	0.
-8.0	0.016	0.021	0.025	0.030	0.036	0.039	0.042	0.046	0.050	0.051	0.044	0.043	0.	-8.0	0.188	0.209	0.325	0.348	0.512	0.630	0.675	0.723	0.672	0.545	0.730	0.741	0.
-9.0	0.014	0.016	0.019	0.023	0.025	0.028	0.030	0.034	0.036	0.036	0.033	0.030	0.	-9.0	0.198	0.296	0.331	0.390	0.496	0.431	0.503	0.554	0.457	0.451	0.610	0.697	0.
-10.0	0.013	0.012	0.014	0.017	0.018	0.019	0.021	0.024	0.025	0.026	0.024	0.021	0.	-10.0	0.128	0.198	0.254	0.302	0.404	0.471	0.449	0.457	0.564	0.448	0.411	0.542	0.

Table – export to Excel

File name: IMRTField1.bin	Plan date: 2004-3-11	File name: IMRTCase1.ild	Measurement date: 2004-3-11
First name: Test	QA plan: Field1	First name: 2002	QA plan: 29; plan 27 f1
Last name: Patient	Beam quality: 6.0 MV	Last name: Irina	Beam quality: 6.0 MV
Patient ID: 123456	Number of beams: 1	Patient ID: Fantom	Number of segments: 10
Buildup: 20.16 mm		Buildup: 20.16 mm	Measurement depth: 0.00 mm
Comments:		Comments:	

Ready

# QAMLog IMRT



3D

User friendly GUI

Display of profiles, 3D etc.

Calculation of D2A, Gamma etc

Gamma

# QAMLog IMRT

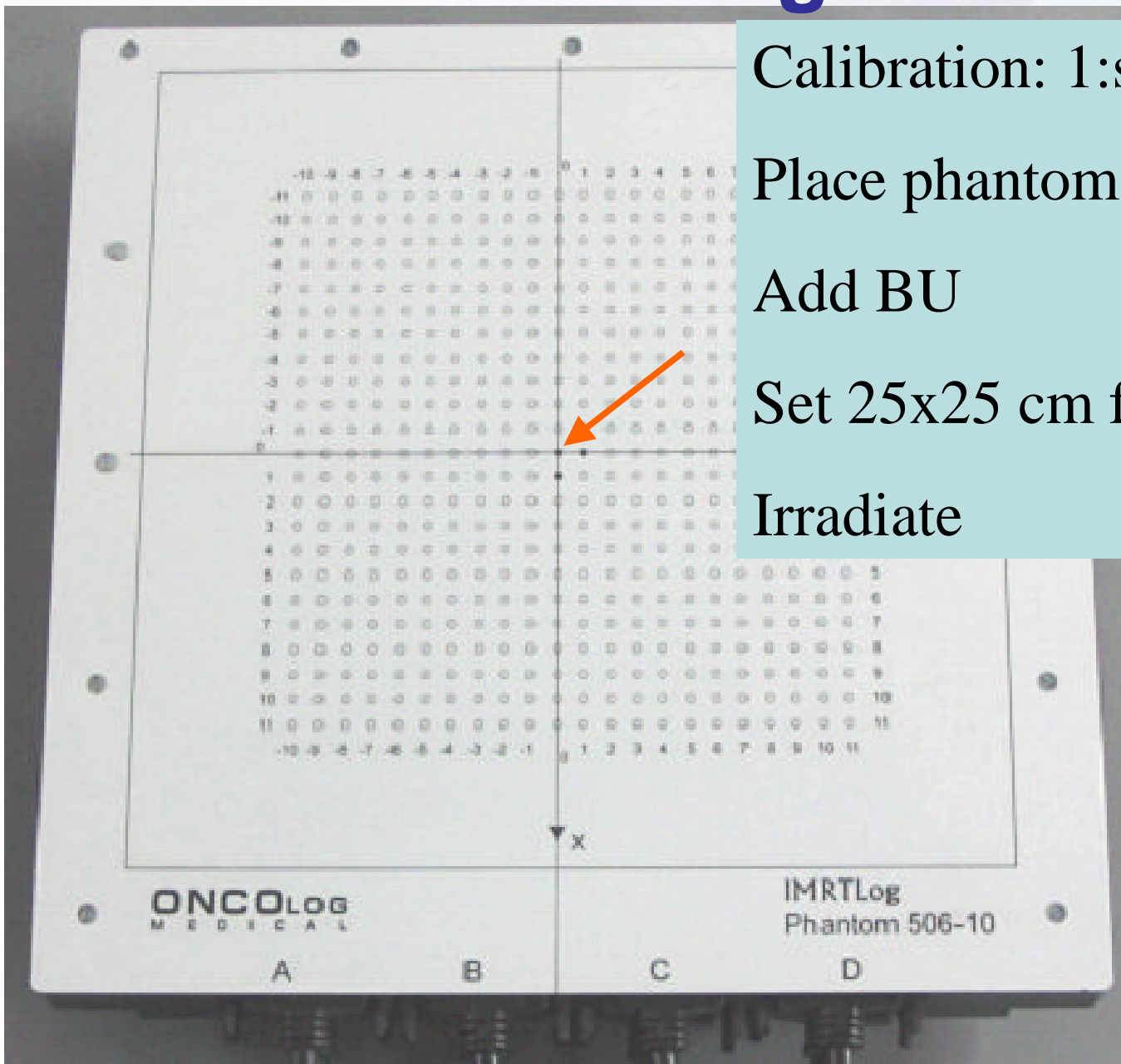
Calibration: 1:st step

Place phantom at centre

Add BU

Set 25x25 cm fieldsize

Irradiate



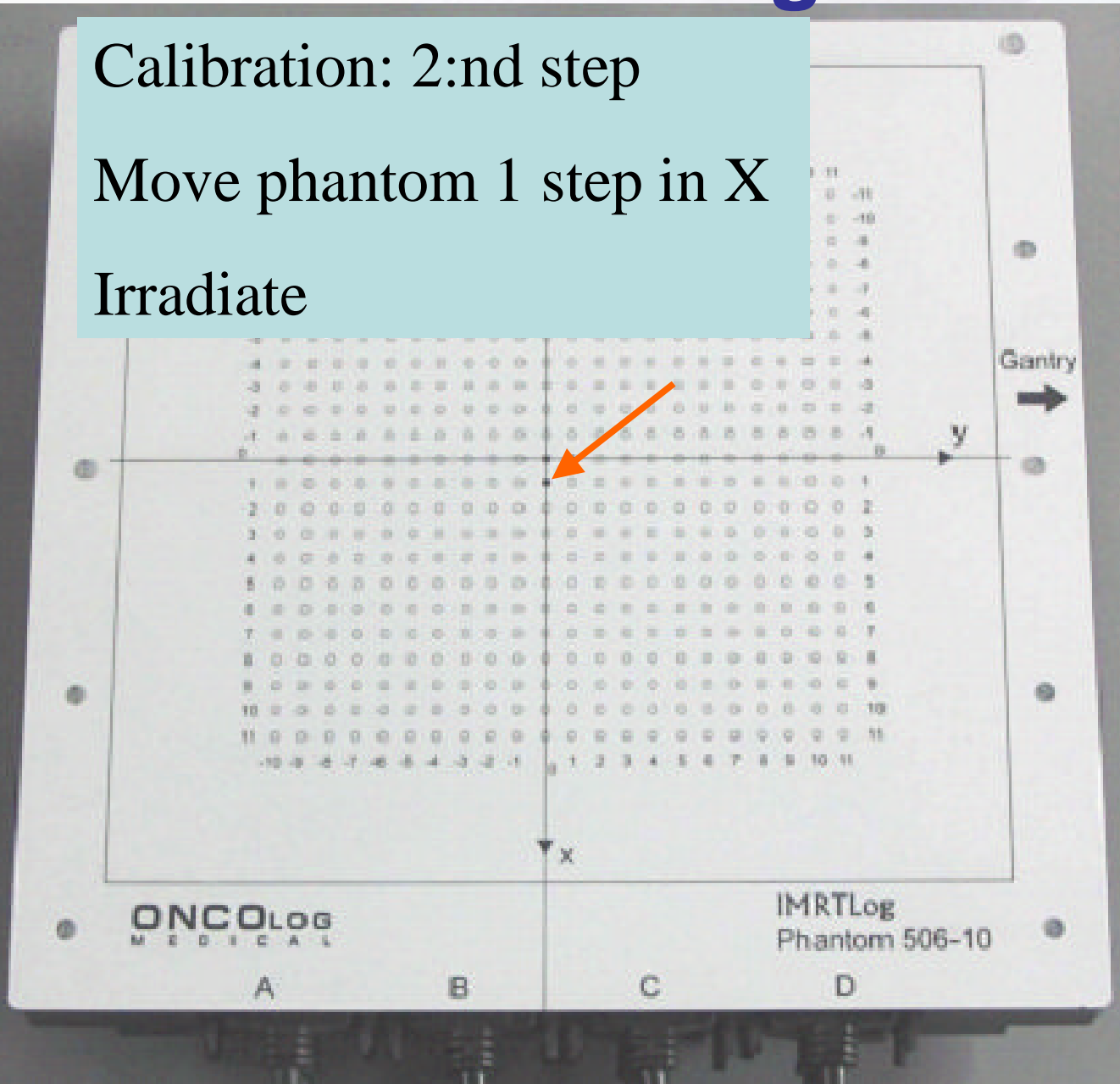


# QAMLog IMRT

Calibration: 2:nd step

Move phantom 1 step in X

Irradiate

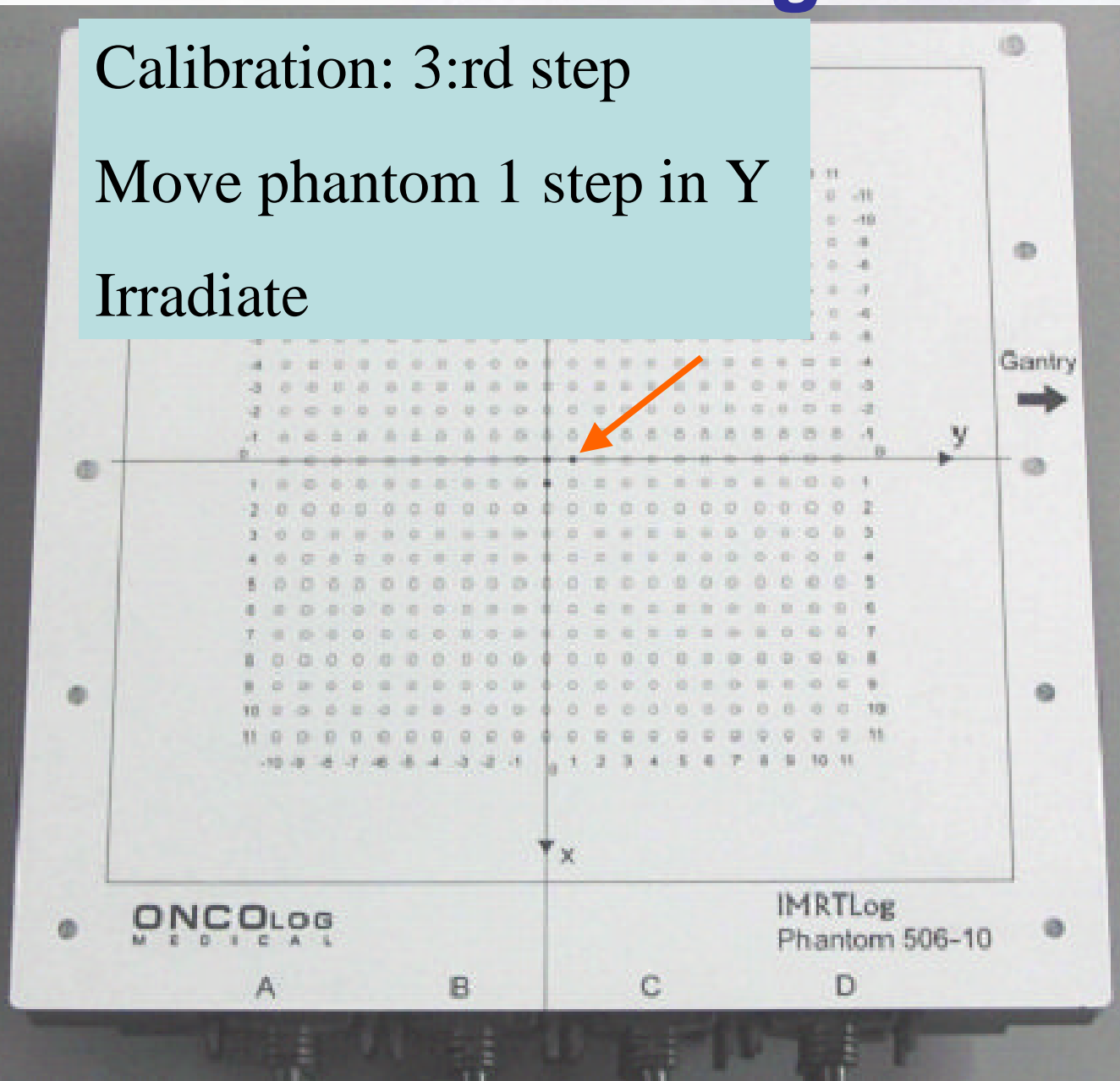


# QAMLog IMRT

Calibration: 3:rd step

Move phantom 1 step in Y

Irradiate



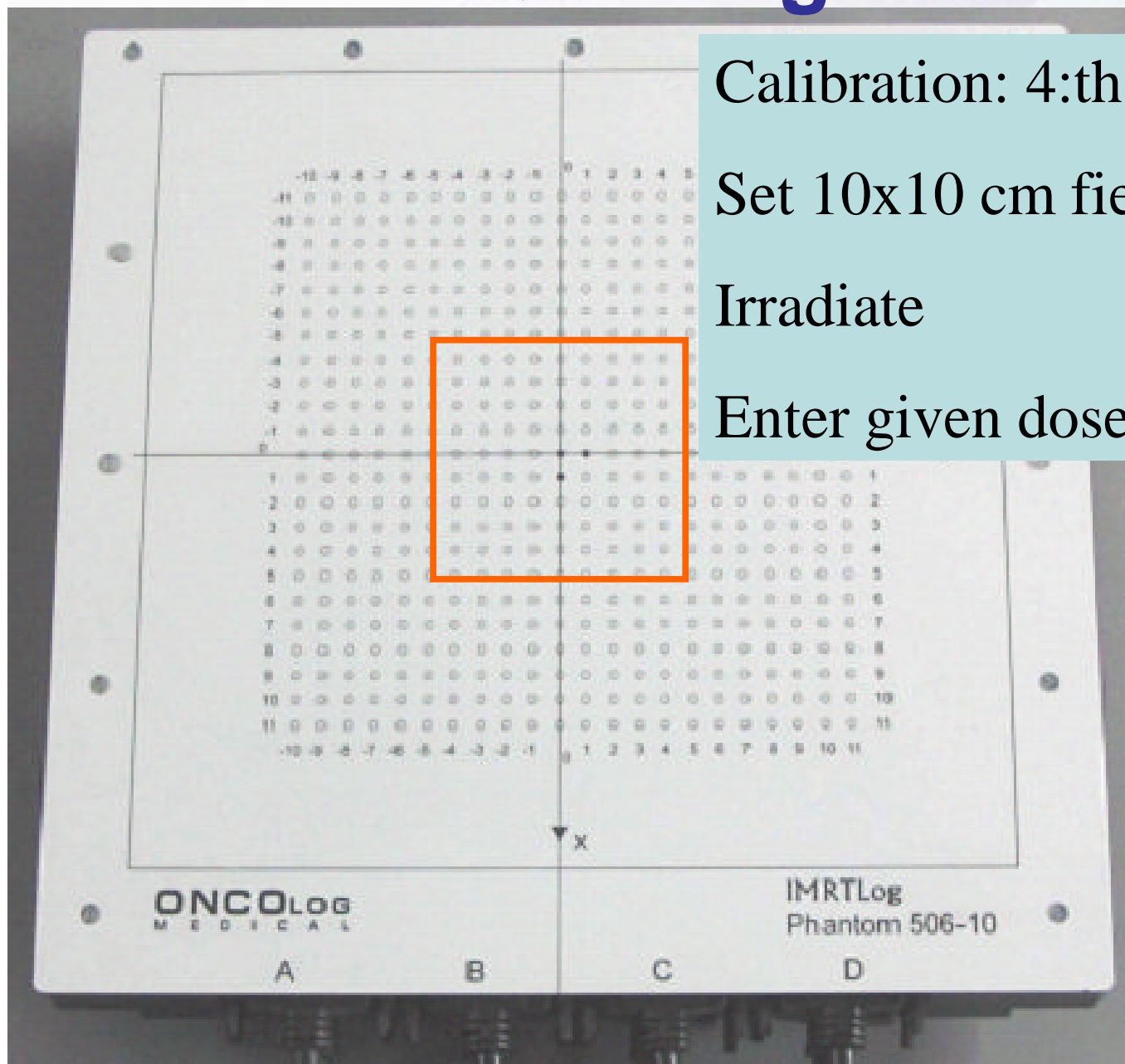
# QAMLog IMRT

Calibration: 4:th step

Set 10x10 cm field

Irradiate

Enter given dose – Done!

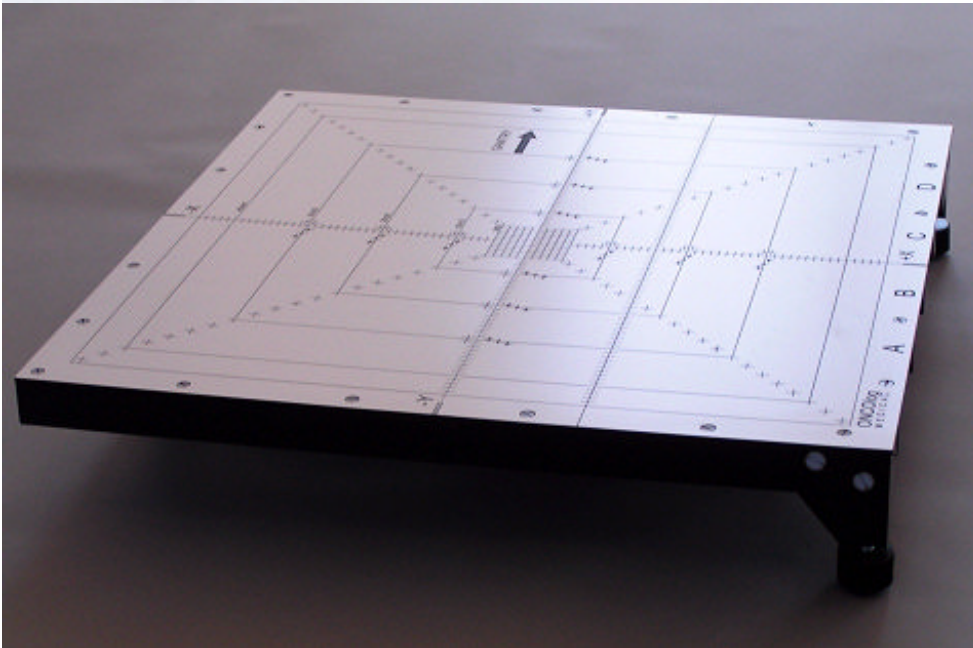




# Oncolog Medical

**QAMLog is more :**

- A Roadmap
- Integrated Concept
- Low total purchase cost
- High spatial resolution
- Fast Gamma



# Oncolog Medical

**Vielen Dank für Ihre  
Aufmerksamkeit**

**Haben Sie Fragen?**

