

EPRISE Roadshow

**Supporting
Biophotonics
Companies at
all Stages**

Dr. Gerd Illing
Oliver Höppner

Who we are

Oliver Höppner



- Dipl. Kfm., Business Administration (TU Berlin) Marketing/ Controlling/ Corporate Finance
- > 1997 CFO at NOXXON Pharma AG
- > 2000 VP Finances at GenProfile AG
- > 2002 supporting life science companies as an interim manager throughout all commercial and financial affairs.
- experience along the entire value chain
- profound network in the areas financing/investing, science and industry.

Gerd Illing



- PhD in Physical Chemistry
- Biotech/Medtech consultant with focus on biomedical optics for diagnostic and analytical devices (biophotonics)
- >10 years experience as CEO (PSF biotech AG, LMTB GmbH)
- >20 Jahre years in establishing, management and evaluation of large cross-disciplinary R&D projects

Where are the systems /
solutions?

Two Perspectives -
One Message

1st Perspective:

Portfolio Analysis of ICT-Biophotonics Projects/Consortia

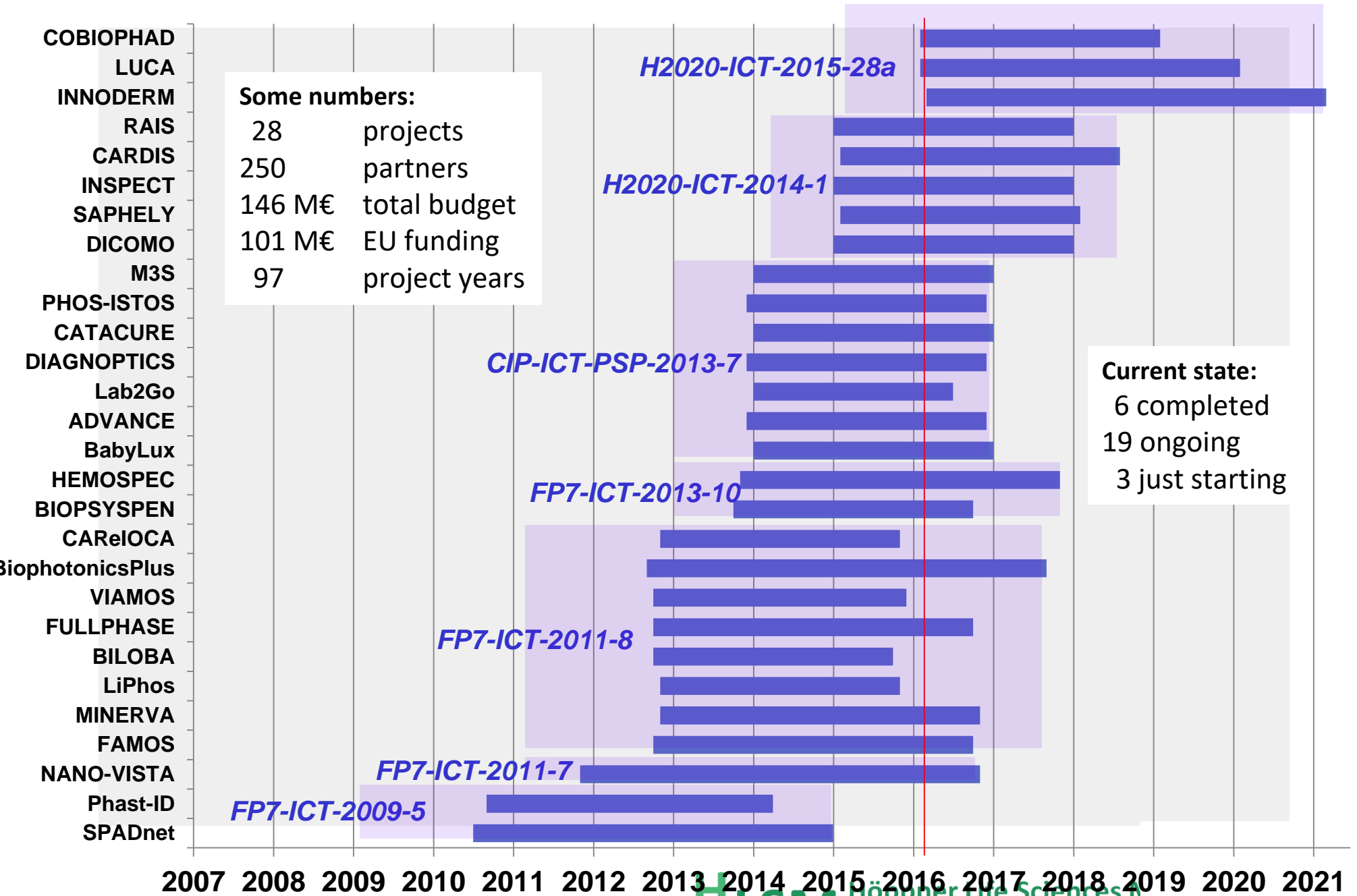
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HORIZON 2020



Projects, Programs, Calls, Timelines



Looking for the Medical Need and Coverage (1v2)

Ophthalmology FAMOS: OCT, PA

Cataract CATAcURE: Trp-F/Laserbleach

BABYLUX: DCS-TRS

Cerebral Bloodflow/Oxyg.

Neonatology

Onc. Thyroid LUCA: DCS-TRS

Esophageal Cancer

Minerva: NIR

Melanoma, AK

DIAGNOPTICS: multimodal

INNODERM, RSOM

**Staying at the surface:
Skin Malignancies**

ADVANCE: OCT

VIAMOS: OCT

Non-Melanoma

BiopsyPen: OCT

Keratosis, Psoriasis

PHOSISTOS: F

Arterial stiffness

CARDIS: laser vibrometer

FULLPHASE: PA Imaging

CVDs

LIPHOS: cell spectrosc.signature

Lab2Go cTn I, IVD **Acute Myocard Infarct**

**Infectious
Diseases**

Hemospec: Raman, FI

Sepsis RAIS: If-IVD

Malaria

Optical Biopsy

CareLOCA: FFOCT

Inspect: Spectrometers

Head Neck, Larynx

Mouth Cancers

Histo/Pathol/Tissue/Cell

M3S: Raman imaging

CLL

Rheumatoid Arthritis

FULLPHASE: PA Imaging

(Auto)immunology

Allergies

COBIOPHAD: IgE-IVD CompactDisc

Subcellular imaging

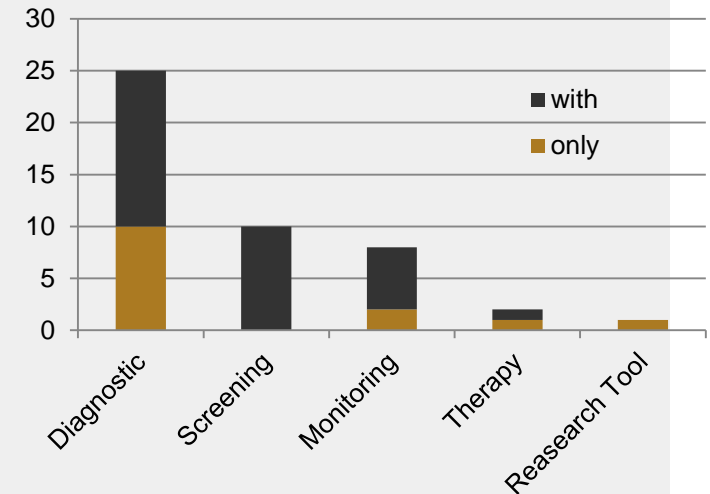
NANO-VISTA: nano-antenna

Research Tools

HLS

Looking for the Medical Need and Coverage (2v2)

- Almost all projects aim at diagnostics, only two at therapeutic solutions
- All are minimal to non-invasive as desired
- Label free if invasive is still the great challenge!



target / via	skin	blood biomarker	blood	exc. biopsy	biopsy	eye	PET	X-ray	total	cancer
skin cancer	5			1					6	6
cancer, generic		2					1		3	3
blood vessels	1	1		1	1				4	
blood cells			3						3	1
eye						2			2	
skin psoriasis	1								1	
brain oxygenation	1								1	
esophagus				1					1	1
immune		1							1	
rheumatoid finger joints	1								1	
thyroid	1								1	1
head, neck, mouth, larynx					1				1	1
pancreas		1							1	1
generic					1			1	2	
total	10	5	3	3	3	2	1	1	28	14

- Missing? Many!
Even some accessible surfaces with great medical relevance are missing
 - PDT 1x,
 - Laser surgery/therapy 1x
 - Neurology 0x
 - Dentistry 0x
 - Bronchoscopy 0x
 - Gynecology: oncology, reproductive 0x
 - Transfusion medicine (blood products), hematology, renal care...0x

Outcome of 2011 to 2020 ICT Biophotonics Projects

Overall Outcome:

- ...
- Shift from components and research tools towards medical systems is clearly visible over the years and along calls.
- Very successful at component level, less successful at system level
- ...

Examples:

- An earlier project claims medical solutions in ophthalmology and oncology, will yield mainly components for OCT.
- Another project claims medical solutions for cancer diagnosis, with some chance to deliver. They provided already a number of significantly improved components for NIR applications, some of them world record.
- A later project combines working methods into a multimodal system for skin cancer diagnosis with strong commitment to clinical validation, multinational approval.

2nd Perspective...

...from in between
Companies and Financing

Our daily business



Interim Management



Strategy consulting and business development



Start-up and growth financing



Establishing and managing of networks and consortia

Outcome

- ❑ Great components
- ❑ Not so many great systems / solutions
- ❑ Lack of market focus
- ❑ No systematic analysis of healthcare systems and players
- ❑ Sticking to the wrong ecosystem:
„research doctors“ instead of practitioners and patients

Thank you!

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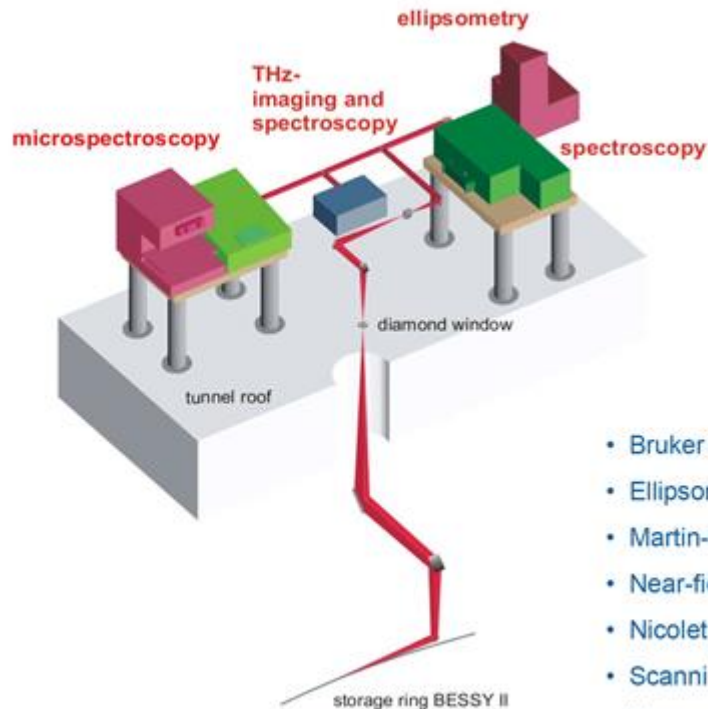
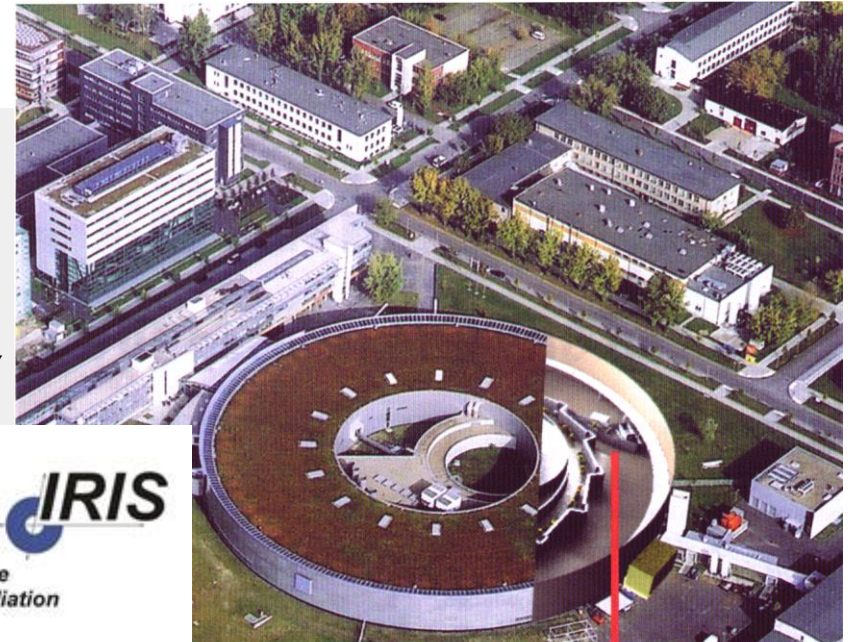
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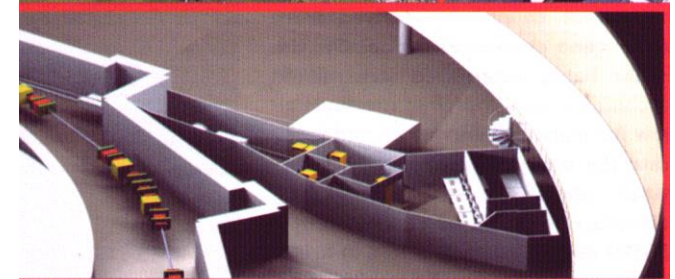
Twenty Years
back:
Start of...

... Infrared and hard X-ray beamlines at BESSY



IRIS
infrared initiative
synchrotron radiation

- | | |
|-------------------------|----------------|
| • Bruker 66/v | NIR, MIR, FIR |
| • Ellipsometer (ISAS) | MIR |
| • Martin-Pupplet | FIR (THz) |
| • Near-field microscope | FIR (THz) |
| • Nicolet Nexus 870 | NIR, MIR |
| • Scanning Microscope | MIR |
| • Vacuum Microscope | FIR (THz), MIR |



... of the cake: Schematic view on the Protein Structure Factory's three orange ring BESSY that are now seamlessly integrated into the work of Luftbild & Pressefoto R. Grahn, 2002).

Forthcoming ICT Biophotonics Calls

- **ICT-03-2018-2019: Advanced optical medical device technologies for medical diagnostics (2019 call):**

maturing a technology platform and providing access to novel, reliable, robust optical based devices for in-vivo and/or in-vitro medical diagnosis.

- **ICT-05-2019: Photonics systems for advanced imaging to support diagnostics driven therapy:**

Actions should research ground-breaking, reliable (high sensitivity, specificity and accuracy), safe to operate, cost-effective and fast photonics enabled imaging system to support diagnostics during intervention and treatments of major diseases like cancer (excluding skin cancer), infectious, degenerative and cardiovascular diseases.