

PAUL SCHERRER INSTITUT



ESTIA



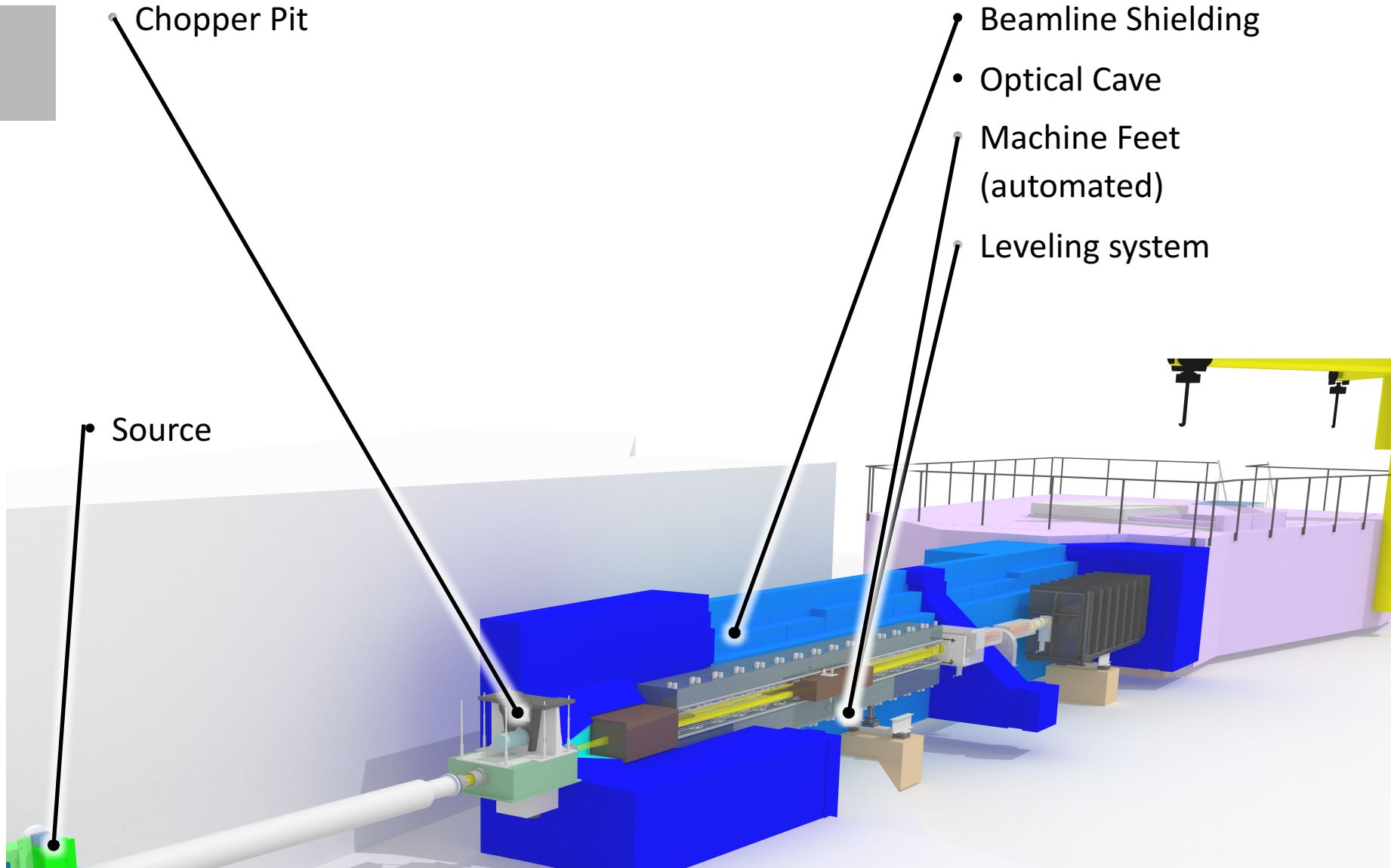
Sven Schütz :: ESTIA instrument engineer :: Paul Scherrer Institute

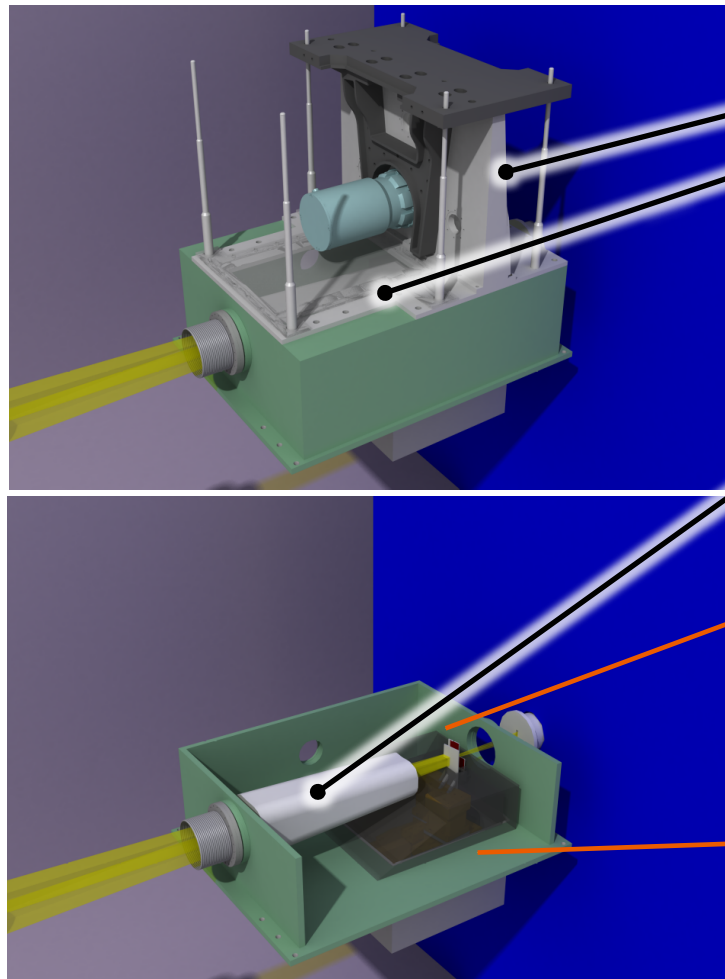
ESTIA – The ESS Small Sample Reflectometer Standardisation

BrightnESS :: Bilbao :: 14.11.2016

- What gain do we expect from standardization?
- What is the kind of standardization we should talk about?
 - Documentation?
 - Communication?
 - Technical solutions?
- What kind of standardization will make the “Phase 2” of the ESTIA instrument more efficient?

ESTIA – Project Introduction

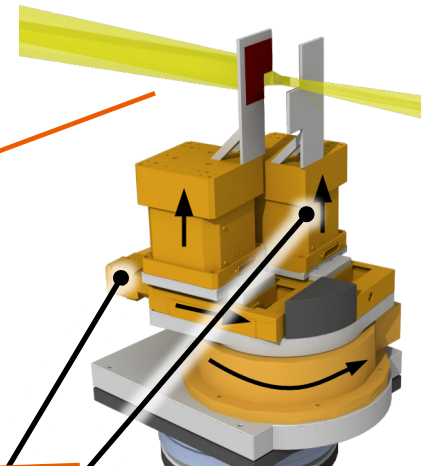




14 Hz Bandwidth Chopper

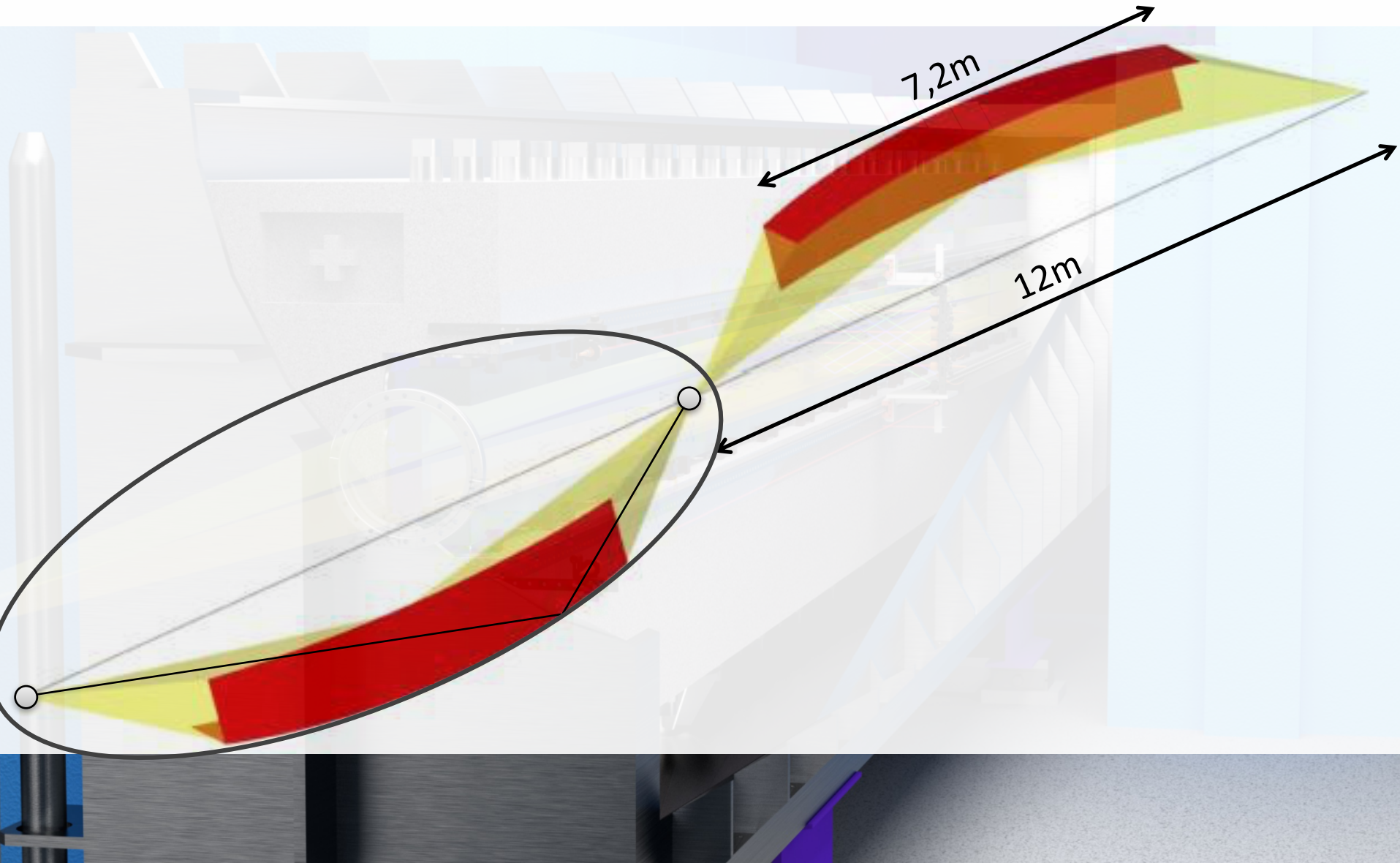
Remote handling vacuum sealing

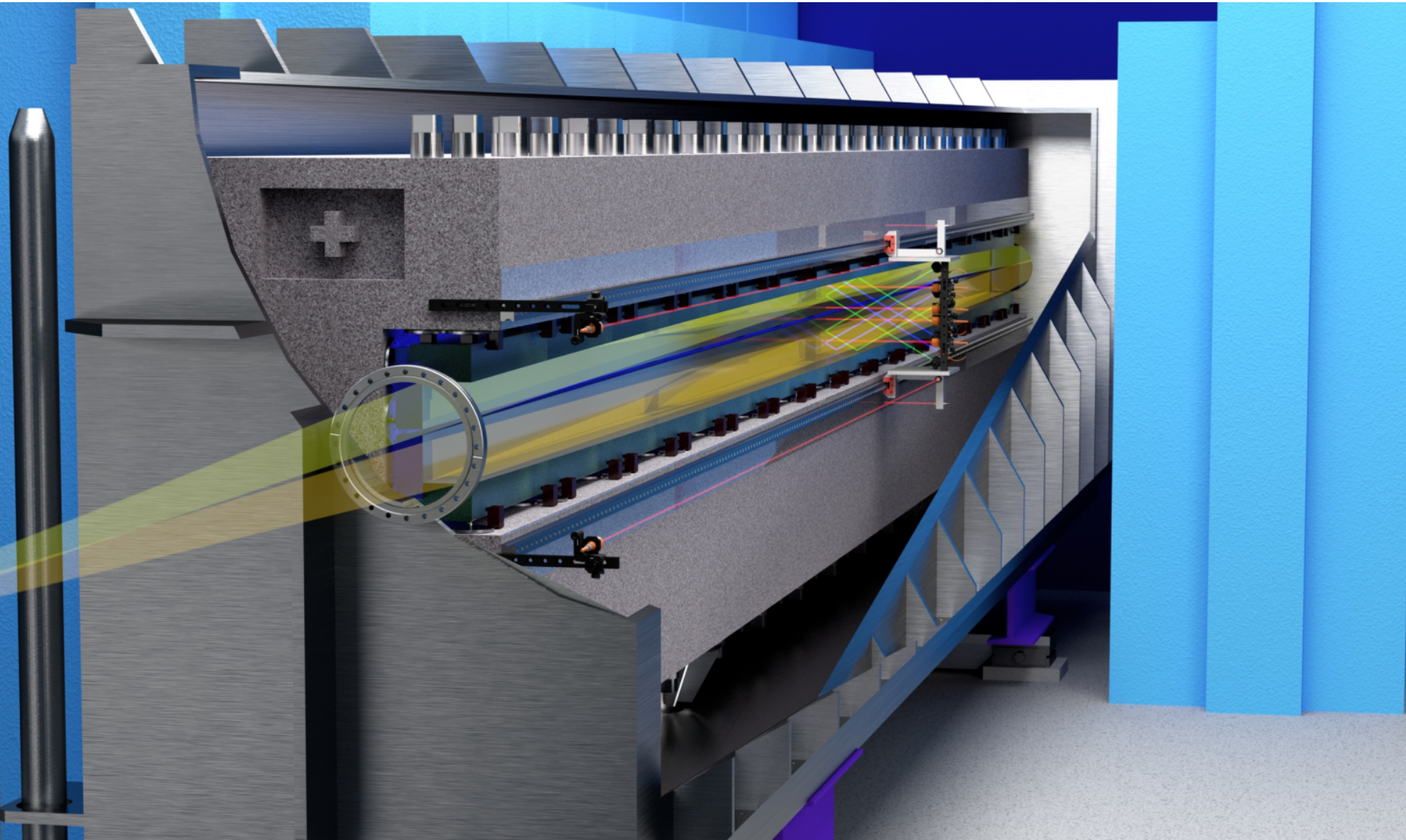
Manual adjustment of
heavy collimation ± 0.1



High precision linear guides
parallelity: ± 0.5 mrad/10mm

Actuators in radiation environment



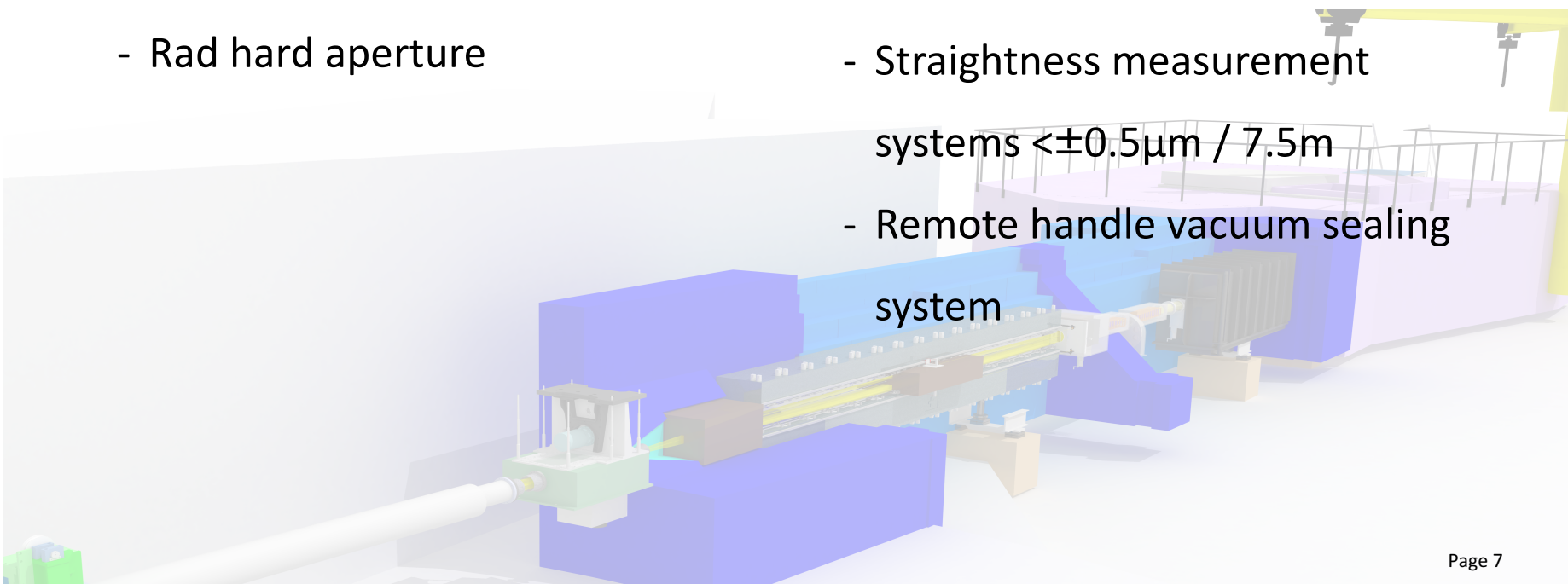


We have solutions for:

- Hydrostatic leveling system
- Absolute interferometer
- Hexapod
- Chain sample changer concept
- Rad hard aperture

We are looking for solutions for:

- Rad hard precision rails
- Rad hard driven rails
- Automated machine feet
max. load 10T
- Straightness measurement
systems $< \pm 0.5 \mu\text{m} / 7.5\text{m}$
- Remote handle vacuum sealing
system



Standardization is [...] the process of implementing and **developing technical standards** based on the consensus of different parties that include firms, users, interest groups, standards organizations and governments. Standardization can help to **maximize compatibility**, interoperability, **safety**, repeatability, or quality. [...].

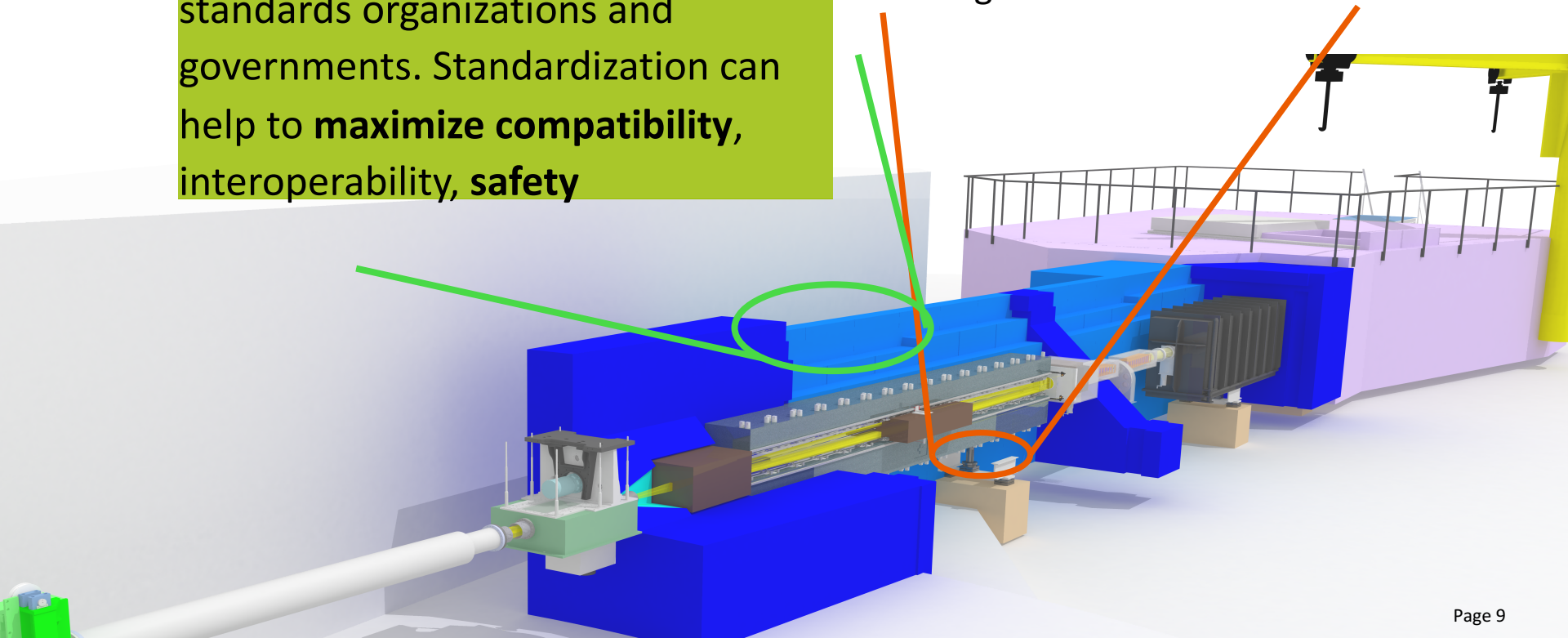
A **guideline** aims to **streamline particular processes** according to a set routine or sound practice. By definition, following a guideline is never mandatory. Guidelines are not binding and are not enforced.

<https://en.wikipedia.org/wiki/Standardization>

<https://en.wikipedia.org/wiki/Guideline>

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Product class	Product	Brand	Rad Zone	Home page	ESTIA
Leveling, measurement	Hydrostatic Levelling System	Edi Meier + Partner AG	2		8 sensors 1 electr. unit
Interferometer, measurement	Abs. Multiline Technology	Etalon AG	4		48 sensors 1 electr. unit

- Wikipage with a MySQL database with read and write right for everybody.
 - Only the own information can be modified
 - Can also be used as a “Good Ideas Park”
- Additional information
 - Provider of the information
 - Datasheets

Standardization Goal

Documentation & Change Management

- “working draft document”, definition by World Wide Web Consortium (W3C)
 - Working Drafts must include [...] that it is a work-in-progress and, as such, may **be updated, replaced, or made obsolete** by subsequent documents and, furthermore, that it **does not represent W3C or member consensus. Readers are cautioned not to use the document as a reference** or, if they do cite it, to refer to it as a work in progress.

EARLY DRAFT
ROUGH DRAFT
VERY ROUGH DRAFT

(<http://whatis.techtarget.com/definition/working-draft-draft-document>)

Standardization Goal

Documentation & Change Management

- After scope setting, ONLY released documents are relevant for the Instruments! (no drafts)
 - Instruments are evaluated according to ESS standards
 - Change of documents leads to labor cost to examine the consequences
 - 1 workweek of an instrument team member = 2,5kE (ESS costbook)
 - **x (10 Instruments + 3 Tech. groups @ ESS) = 32.7kE**
- Changed instrument cost due to changed can be recorded (savings & additional costs)
- Transparency can be increased
 - Instruments realize that something has changed and WHAT exactly has changed.

Set Transparency as Standard

**Keep
It
Simple and
Stupid**

- What gain do we expect from standardization?
- What is the kind of standardization we should talk about?
 - Documentation?
 - Communication?
 - Technical solutions?
- What kind of standardization will make the “Final Design Phase” of the ESTIA instrument more efficient?

Ruthlessness about what standards, guidelines, documents are generated.



My thanks go to

- Name
- Name
- Name

