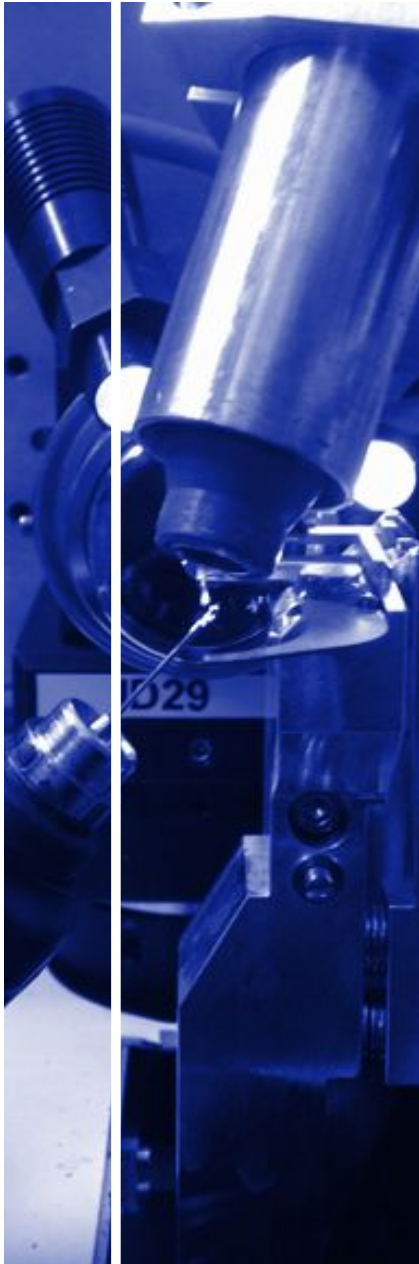
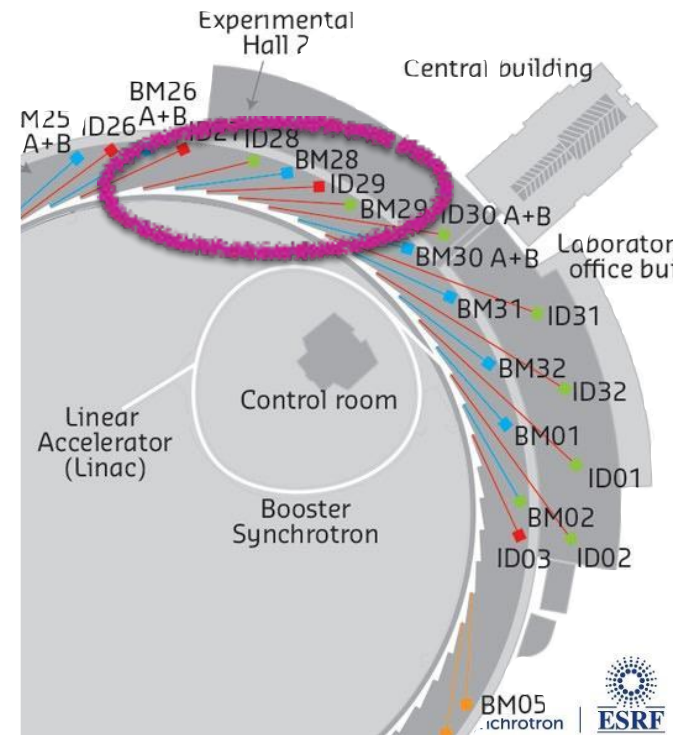
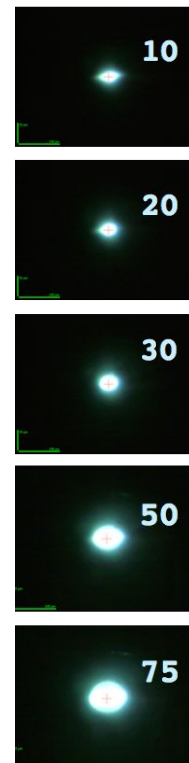
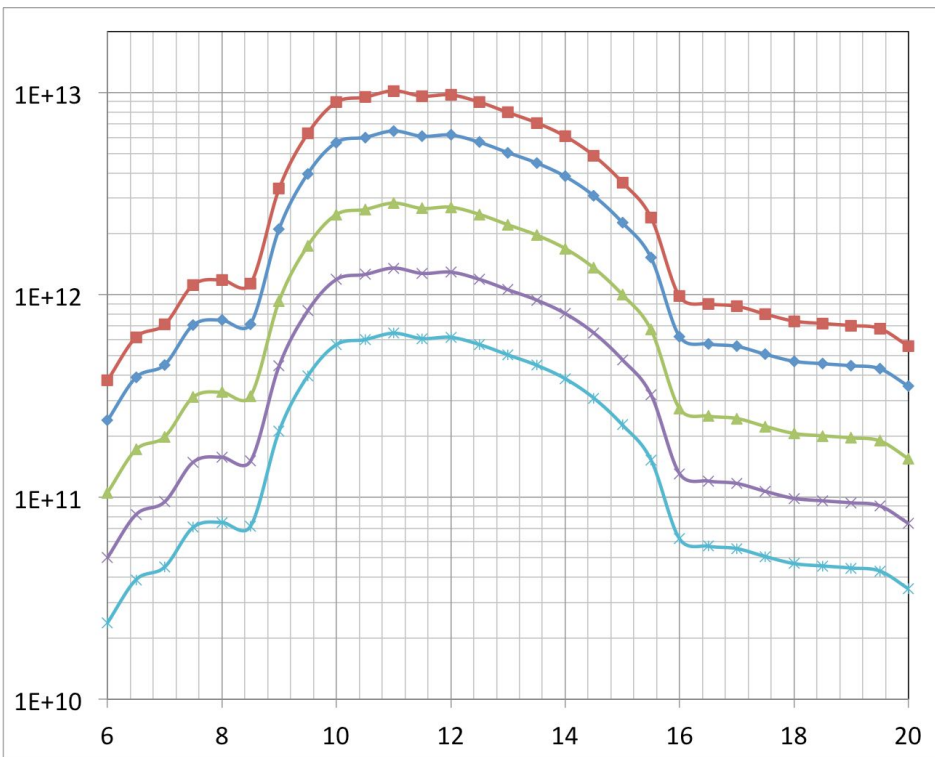
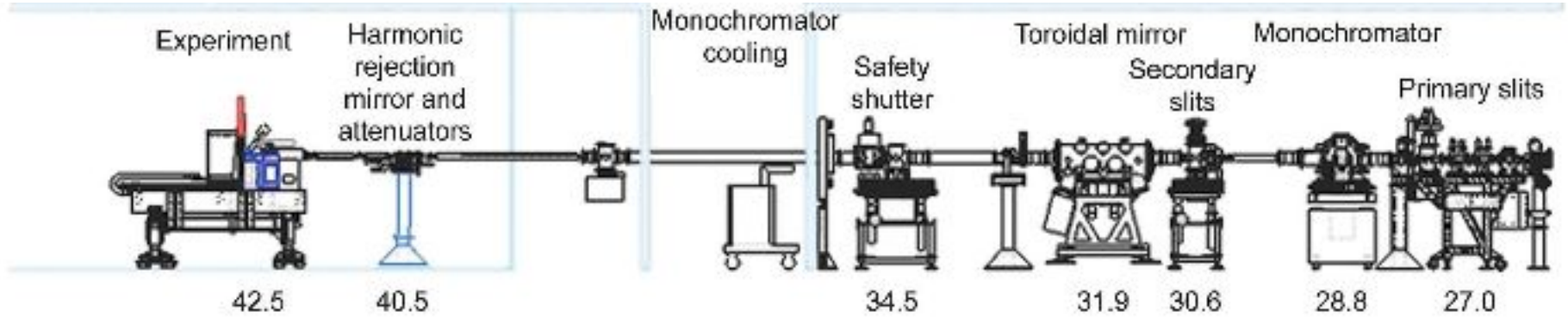




ID29 Current Status and Post-EBS plans



- Quick overlook of the current status
- The EBSL8 project



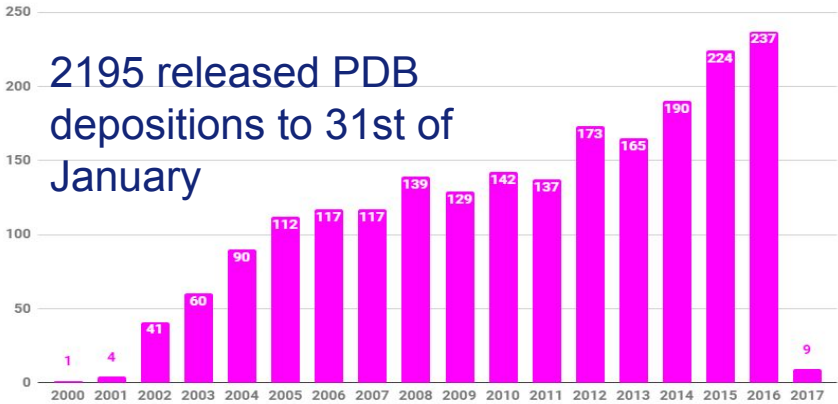


Pilatus 6M-F

MD2 - Microdiff

FlexHCD
12 SPINE + 11 UNIPUCKS

PDB Depositions



2195 released PDB
depositions to 31st of
January

- Little changes since last year
 - New control PC with new name
 - ***“id29control”***
 - Get rid of p1-id29

- Development and deployment of MXCuBE3
- Later this year installation of unipuck double gripper
- Installation of new slitbox with integrated XBPM

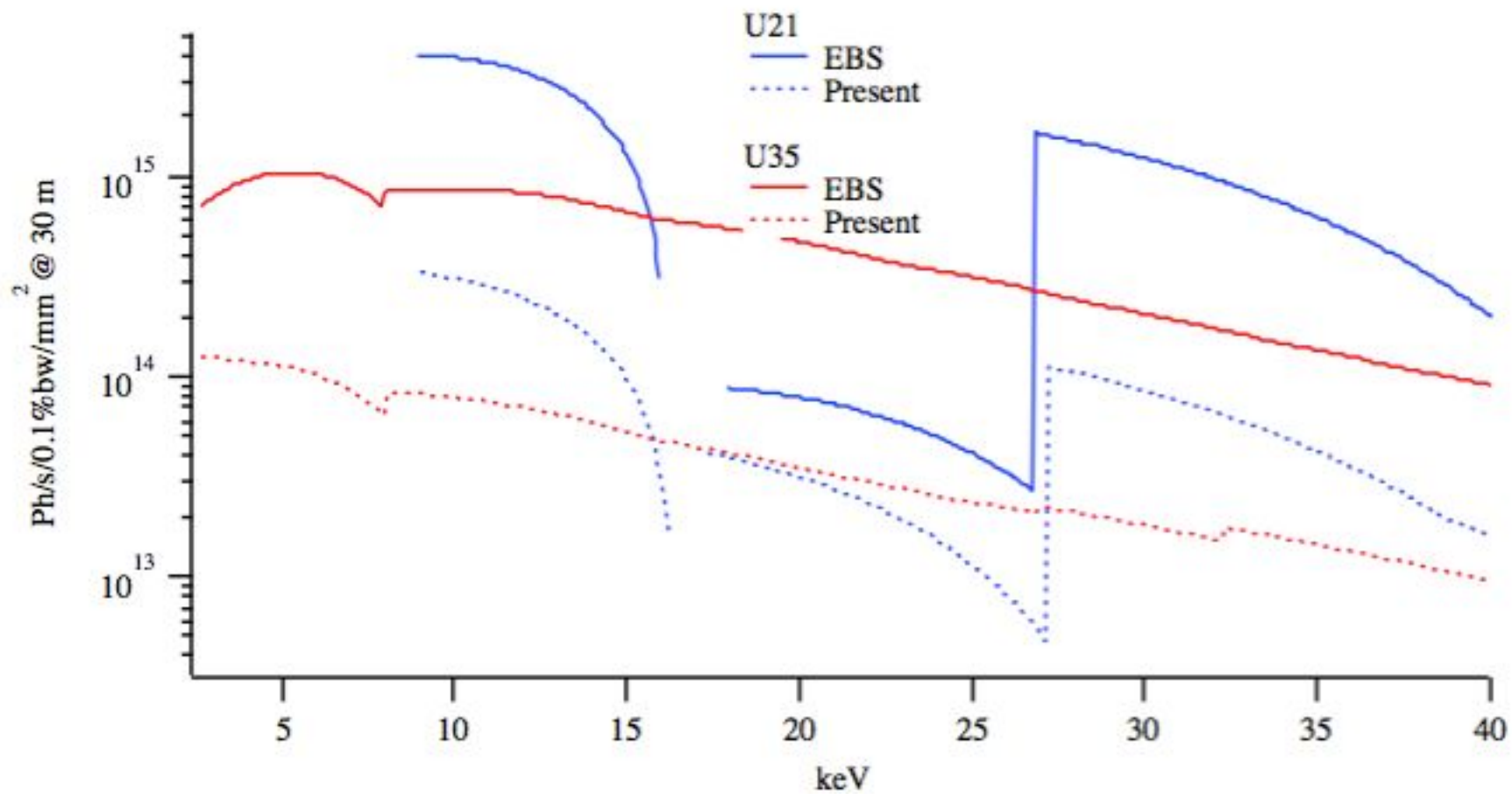
- December 2016 - ESRF - EBS workshop
 - 8 Science cases presented
 - Proposal for a Beamline for MX Synchrotron Serial Crystallography (SSX)
 - MX beamline with extremely High flux density for Serial crystallography experiments

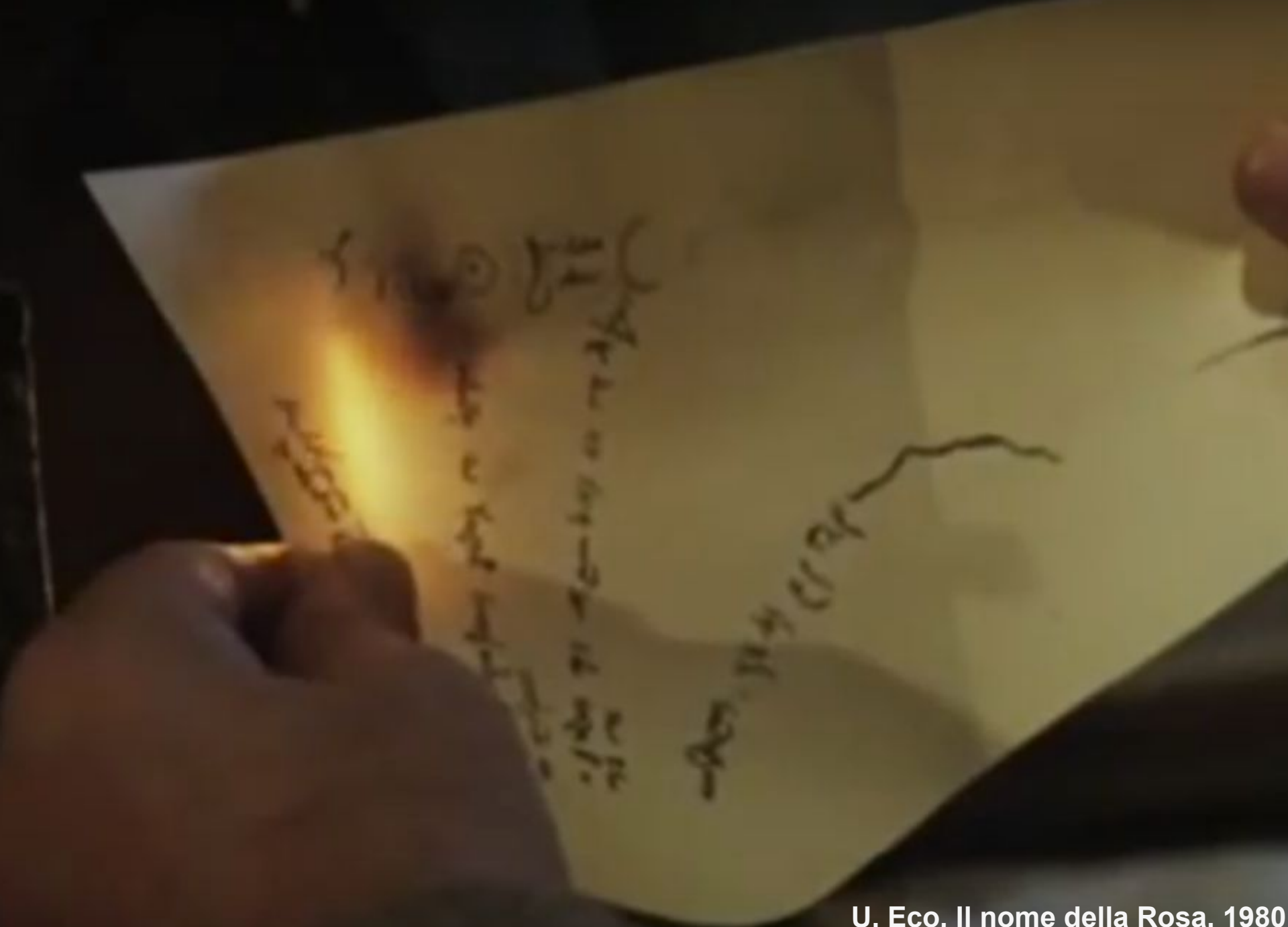
- February 2017 - SAC prioritized the 8 Science cases

- June 2017 - Approval from Council
 - ID29 SSX is one of the two flagship EBS projects
 - Code name **EBSL8**

Present low beta and EBS electron beam parameters

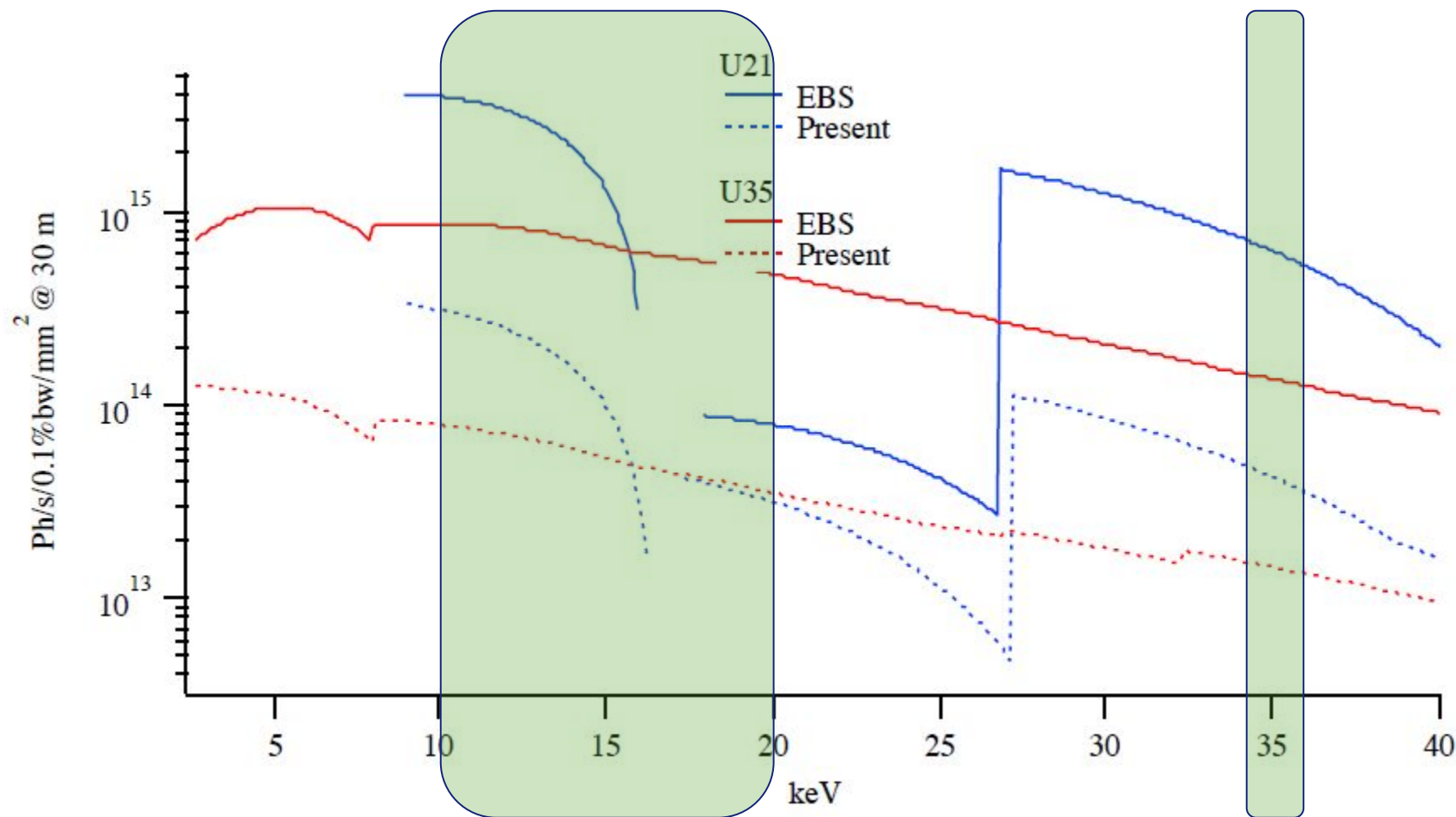
Parameter	ESRF low Beta (ID29)	ESRF EBS
Electron beam energy [GeV]	6.04	6
Nominal current [mA]	200	200
Relative rms energy spread of electron beam []	0.001	0.00095
Horizontal emittance [nm]	4	0.132
Vertical emittance [pm]	5	5
Horizontal beta [m]	0.35	6.9
Vertical beta [m]	2.95	2.65
Horizontal Dispersion [m]	0.0308	0.00175
Horizontal rms electron beam size [μm]	48.5	30.2
Horizontal rms electron beam divergence [μrad]	106.9	4.37
Vertical rms electron beam size [μm]	3.84	3.6
Vertical rms electron beam divergence [μrad]	1.3	1.38



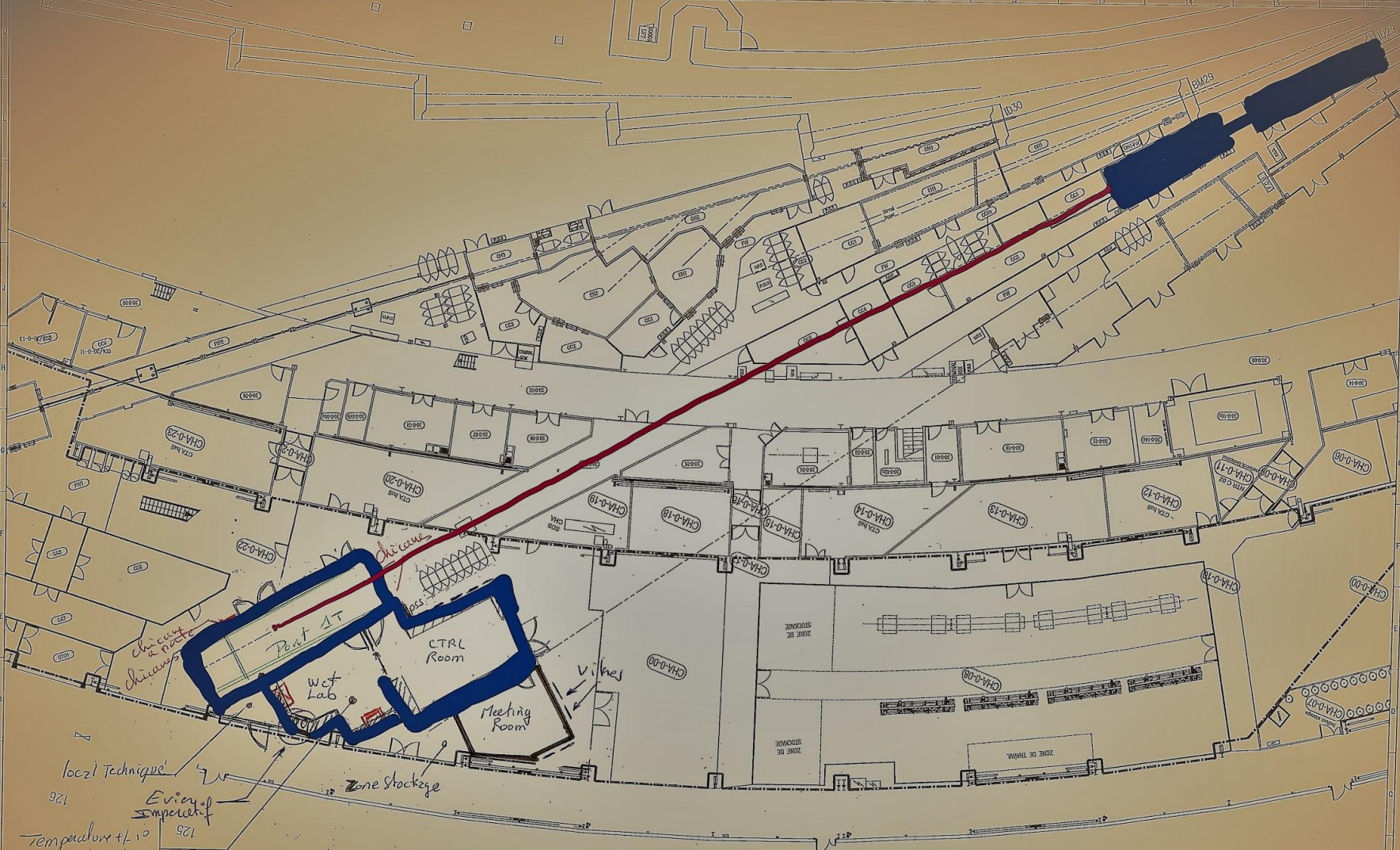


U. Eco, Il nome della Rosa, 1980

JJ. Annaud, 1986



- With currently available sources
- In future a change of sources might be possible

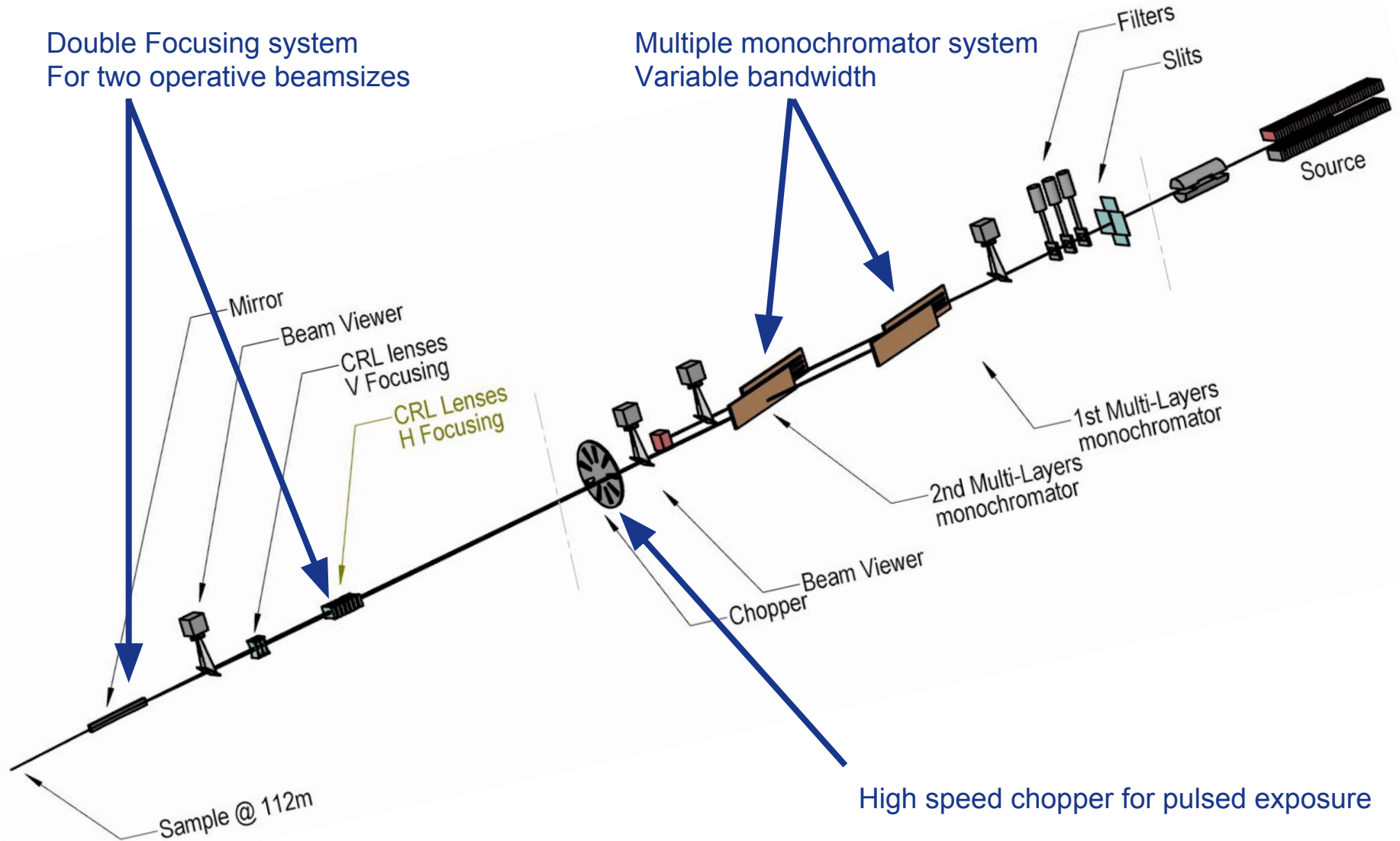


loczi technique
 Evénement Imprevu
 Température +/- 2%
 sol à défence
 2 postes à flux laminaire
 plafond!

MICRO-DATACENTR		DESCRIPTION	
CRD.	APPR.	NOM	DATE
FORMAT: A3		DRN: M. MICHEL	04.10.17
ID29		PROJET	
HUTCHES		EUROPEAN SYNCHROTRON RADIATION FACILITY HIGH AND LOW ENERGY BEAM LINES THE HATCHES - 7491000000	
PROJET		SCALE: 1/250	
ID29	HUTC	PIM	17

Double Focusing system
For two operative beamsizes

Multiple monochromator system
Variable bandwidth

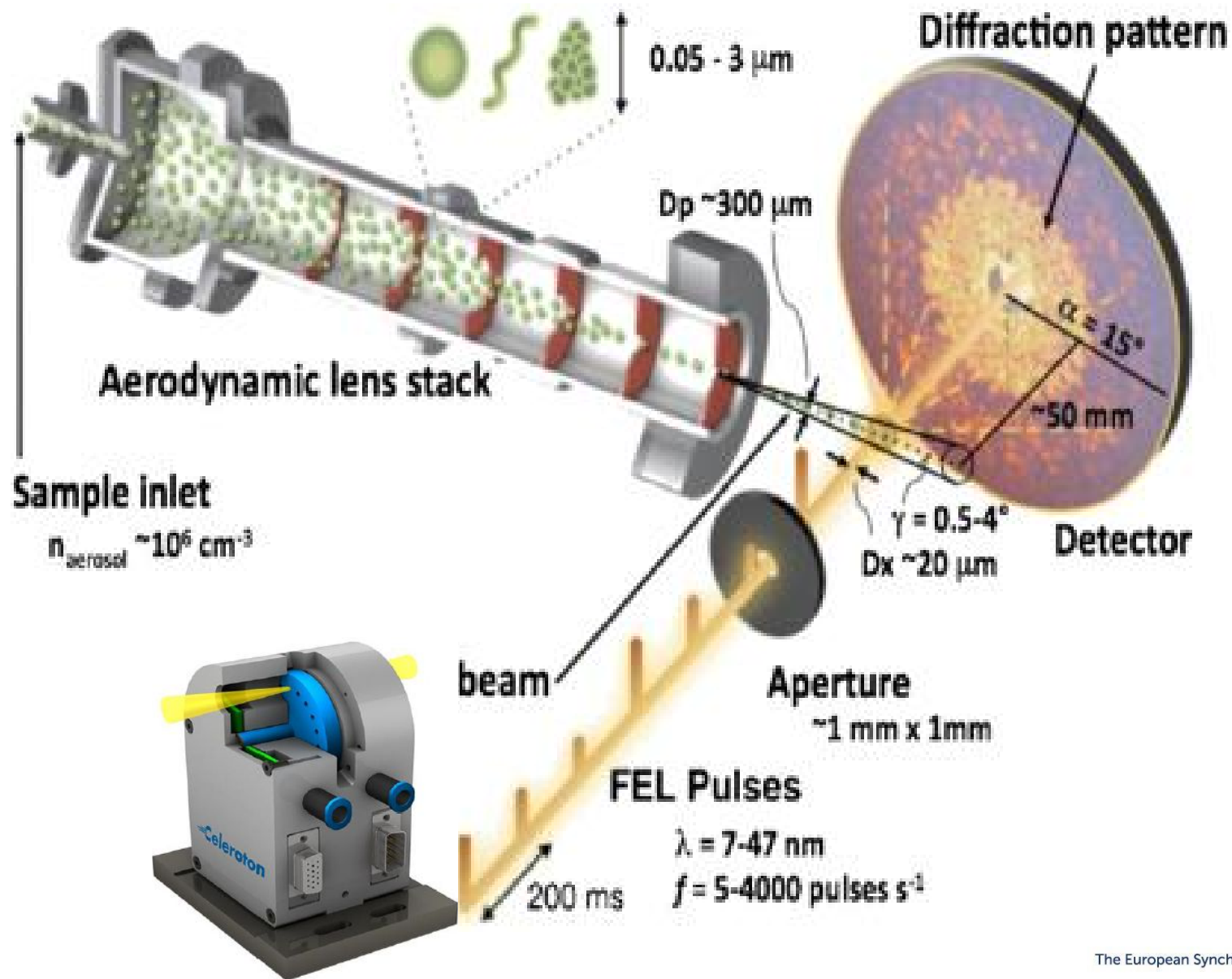


$0.5 \times 0.5 \text{ } \mu\text{m}^2$ 

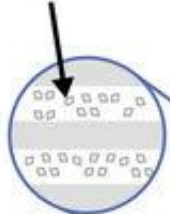
$10 \times 0.5 \text{ } \mu\text{m}^2$



- Two focusings for two different beamsizes
- Diffraction data from stills
- Larger bandwidth (1-2%) will increase Ewald sphere thickness
- Photon flux up to 10^{16} ph/s
- Exposure time down to $1 \text{ } \mu\text{s}$ (or less...)



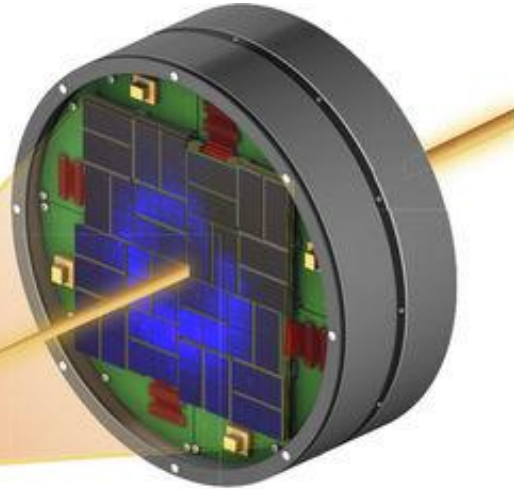
Embedded Protein Crystals



Fixed-target Samples



CSPAD Detector



LCLS XFEL



KB Mirrors



Rapid movement of the stages orthogonally to the beam path

Scan direction



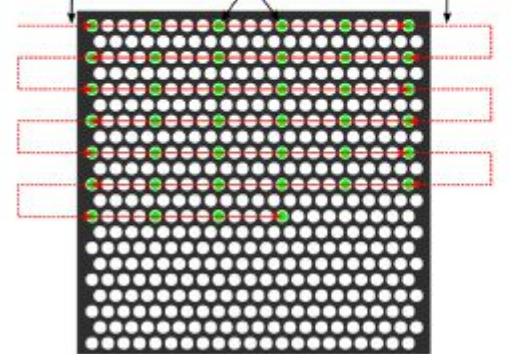
X-ray pulse

d

X-ray pulses (30 Hz)

Deceleration

Acceleration

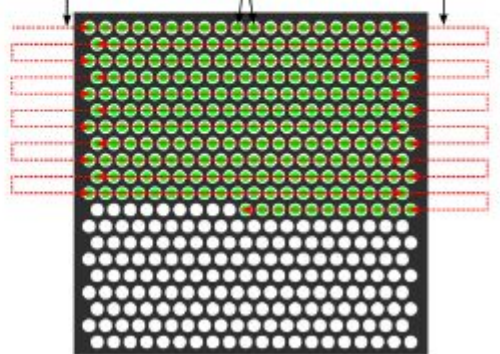


e

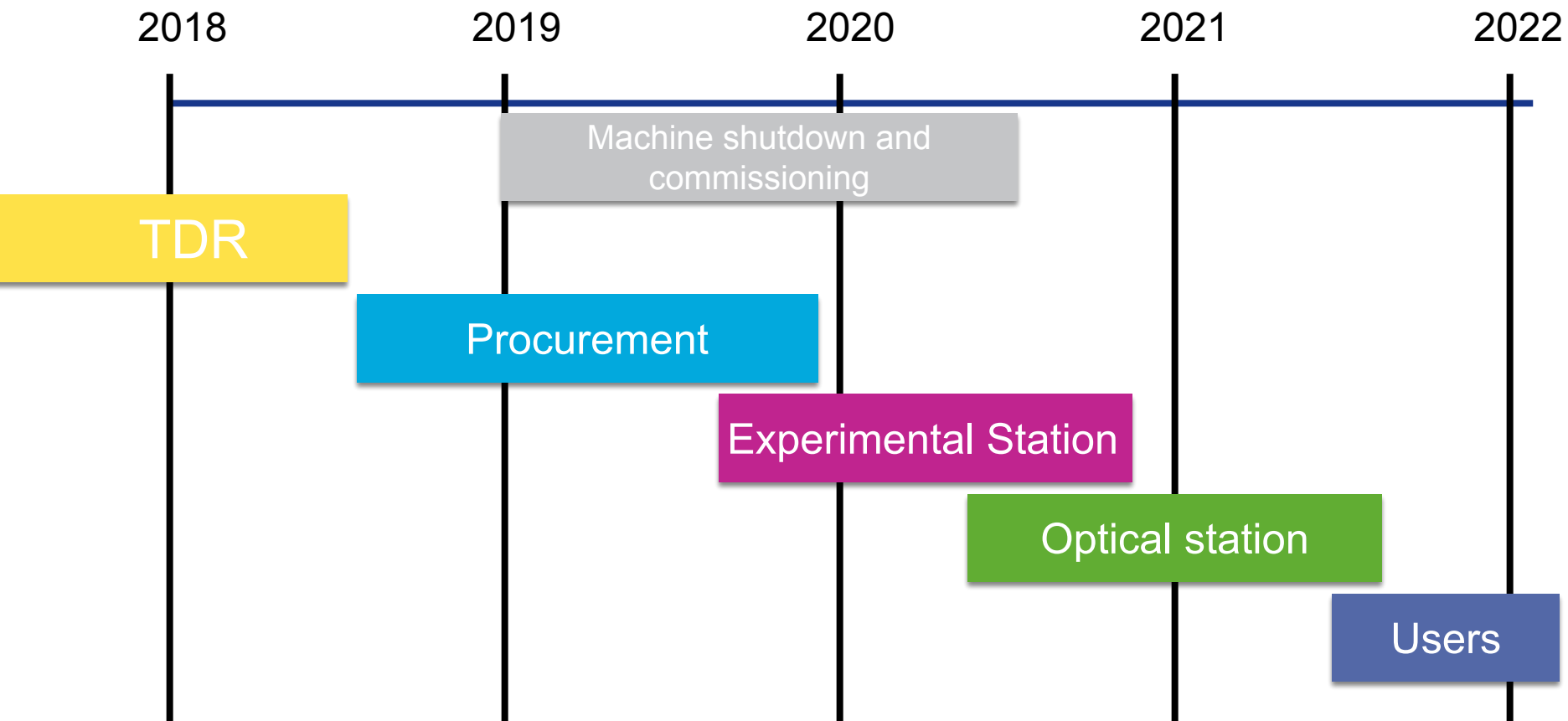
X-ray pulses (120 Hz)

Deceleration

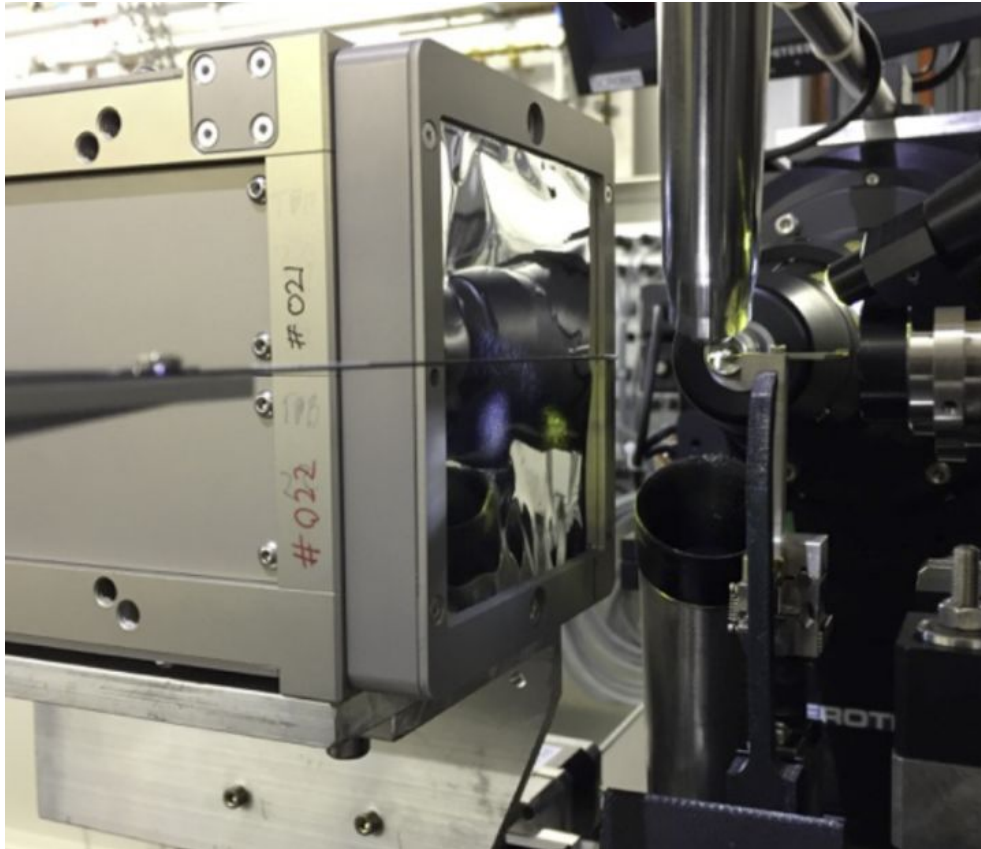
Acceleration



A TIMELINE



A NEW TYPE OF DETECTOR



- The detector we will need is under development by PSI, with a collaboration with ESRF
- It is expected to work at 2 khz with shorter integration time of 1 μ s

- **What from you, the Users?**

- **Grow small crystals!**
- **Move out of the comfort zone :-)**
- **(R)Evolution on how crystal are measured, harvested, protected**
- **Open up to the possibilities of new studies (RT structures, Time resolved structural changes, ...)**