



HISPEC/DESPEC Admin Update

NUSTAR Annual meeting 2018

FAIR/GSI Darmstadt

Alexander Herlert

NUSTAR Resource Coordinator

FAIR



Finland



France



Germany



India



Poland



Romania



Russia



Slovenia



Sweden



UK



FAIR construction – update



FAIR construction – update



Power station north – connected



Feb 12, 2018



Feb 12, 2018



Feb 12, 2018

SIS100 – excavation



Feb 12, 2018

SIS100 – excavation

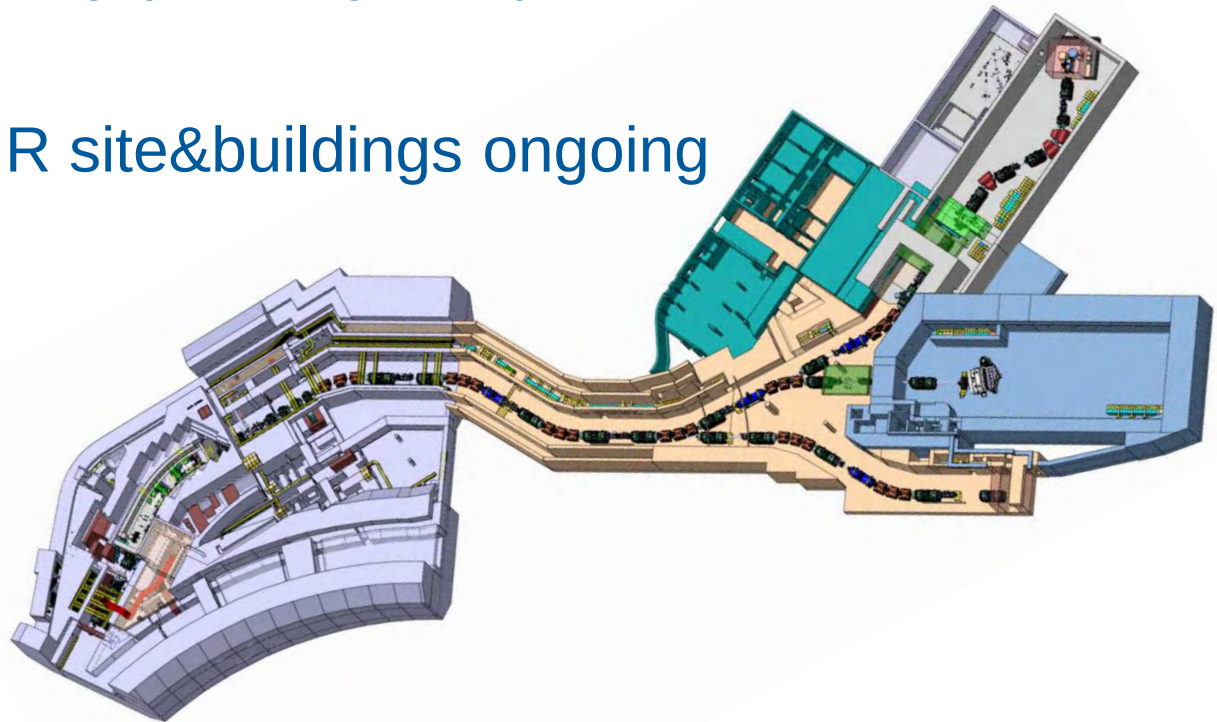


Feb 12, 2018

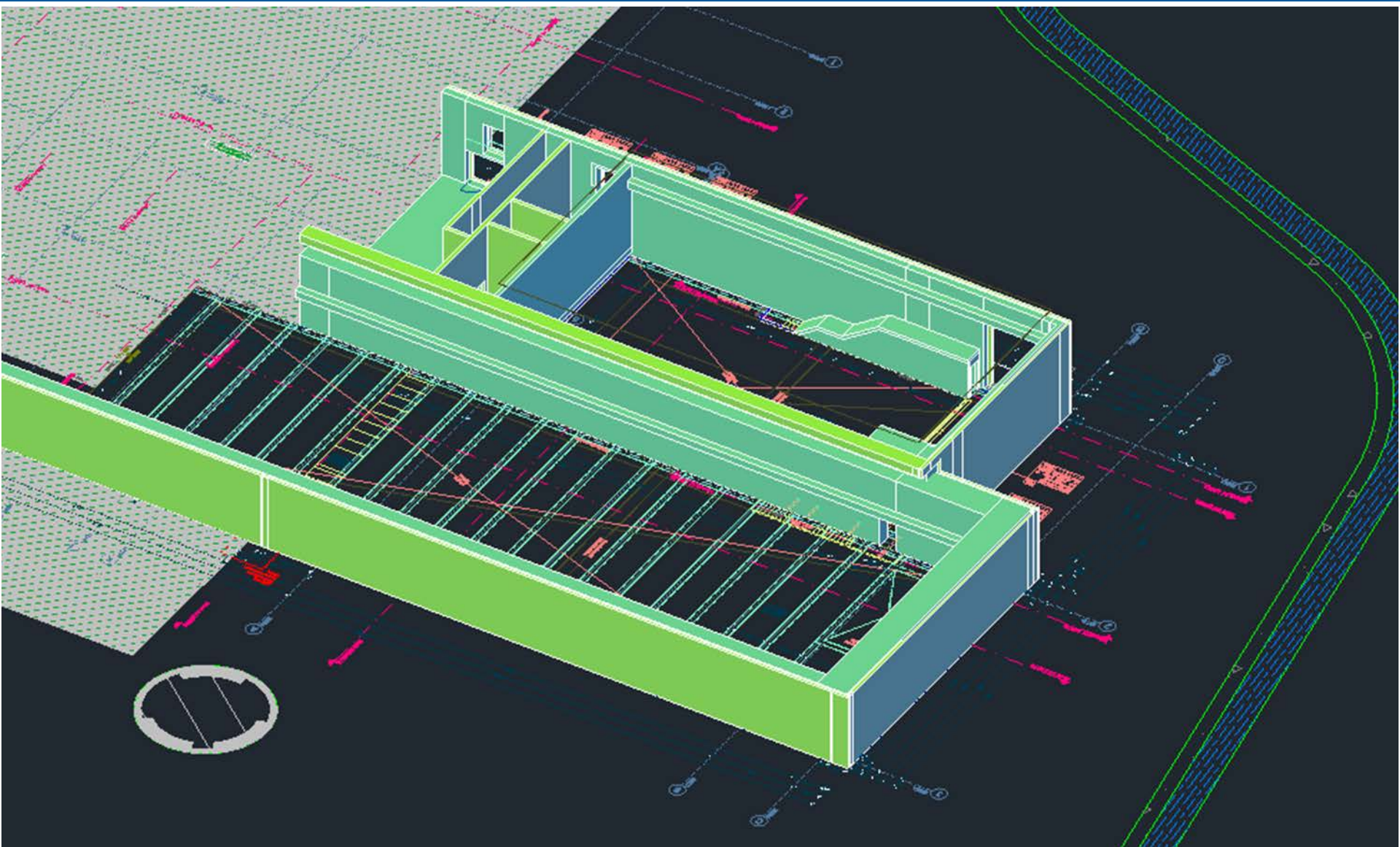
Sub-project NUSTAR responsible for

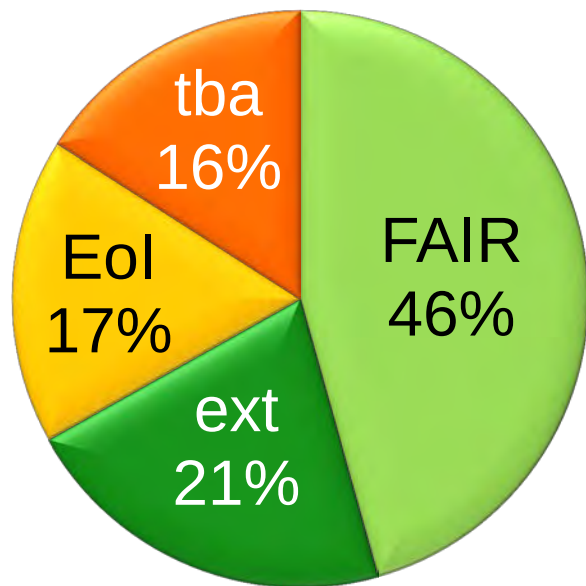
- R³B cave
- LEB cave (including MATS/LaSpec annex building)
- Supply annex building (building 17.2)

Discussions with FAIR site&buildings ongoing



LEB building (building G006B) – Jan 2018





- secured/expected FAIR
- secured external
- Eol
- to be assigned

- funding (secured and expected) from:
(**FAIR members/associates** in bold face)

- Australia
- Belgium
- Bulgaria
- Canada
- **Finland**
- **France**
- **Germany**
- Hungary
- **India**
- Netherlands
- **Poland**
- **Romania**
- **Russia**
- Spain
- **Sweden**
- Turkey
- **United Kingdom**

Status: February, 2018

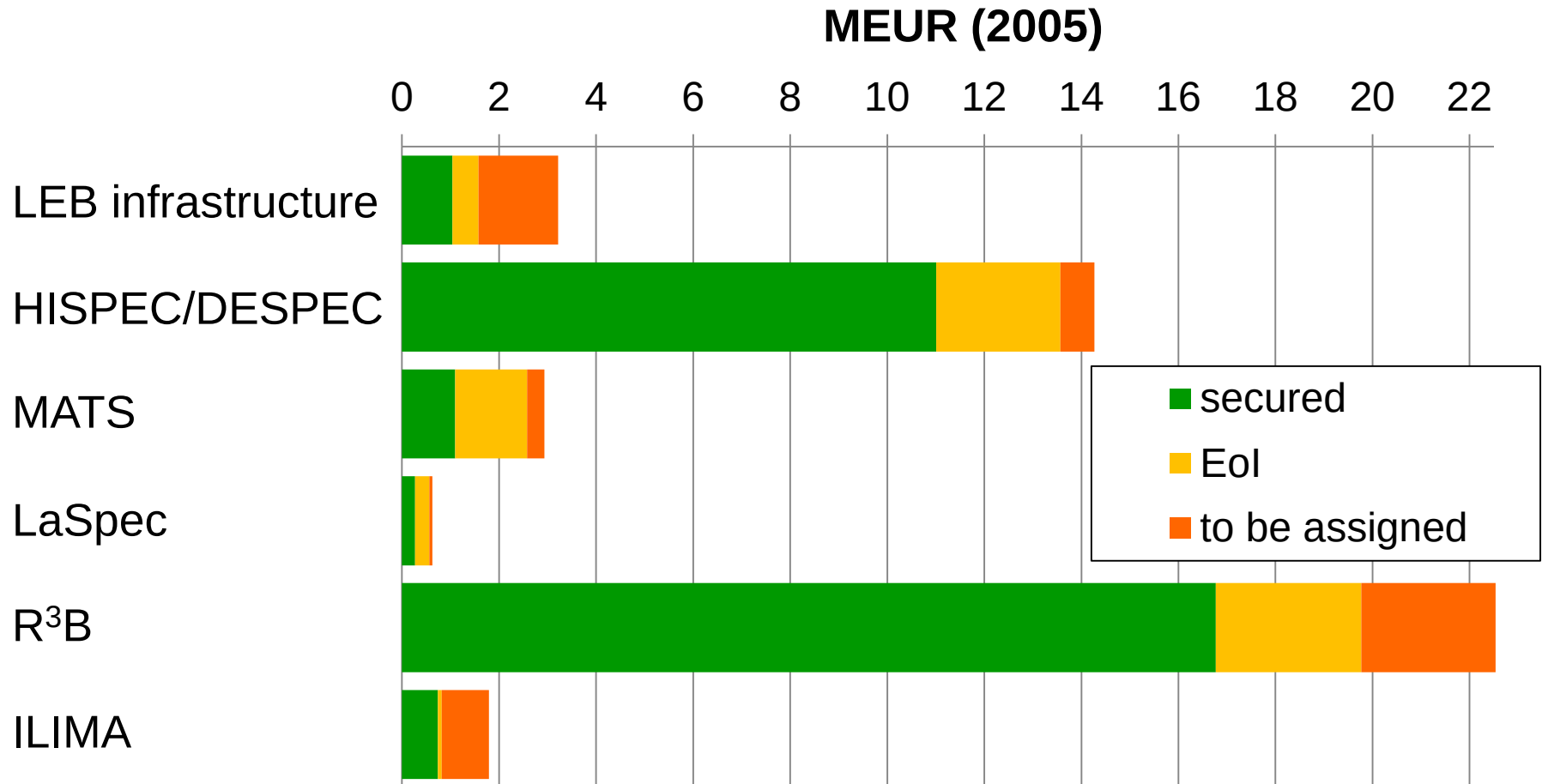
Funding distribution (by country)



	LEB infra-structure	HISPEC/DESPEC	MATS	LaSpec	R ³ B	ILIMA	total	secured	Eol
Australia		50					50		50
Belgium				154			154	83	71
Bulgaria		16					16	16	
Canada						31	31		31
Finland		388	215	107			710	710	
France		220			2935		3155	2935	220
Germany	1576	2016	1825	214	8438	786	14855	12033	2822
Hungary					12		12	12	
India		2291	133				2424	2010	414
Netherlands					104		104	104	
Poland		500					500	500	
Romania		1823					1823	1823	
Russia			107		2994		3101	1423	1678
Spain		2432	300		1270		4002	1915	2087
Sweden		1000			1800		2800	2800	
Turkey		89					89		89
United Kingdom		2742		87	2213		5042	4555	487
to be assigned	1644	703	353	66	3631	974	7371		
total	3220	14270	2933	628	23397	1791	46239	30919	7949

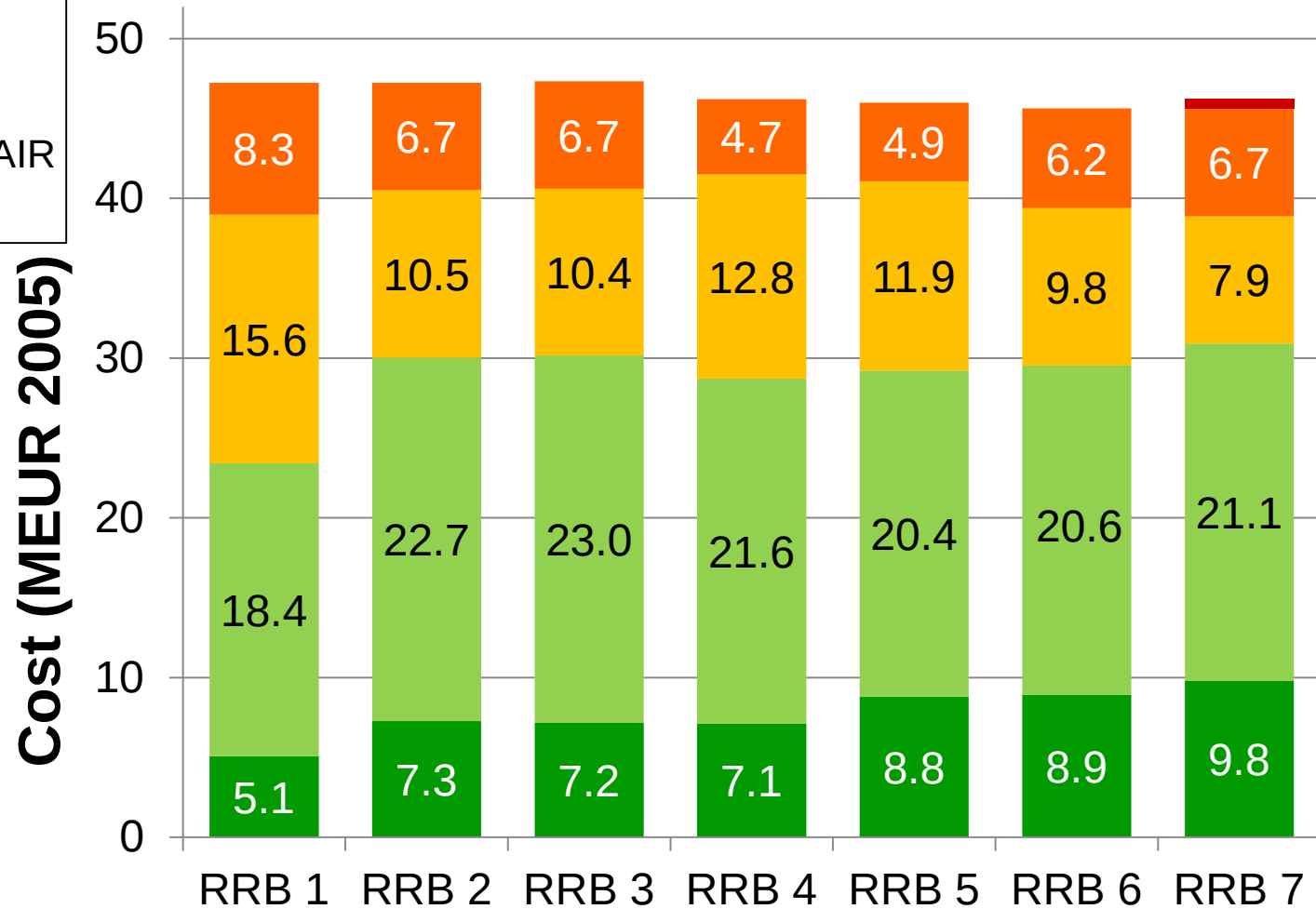
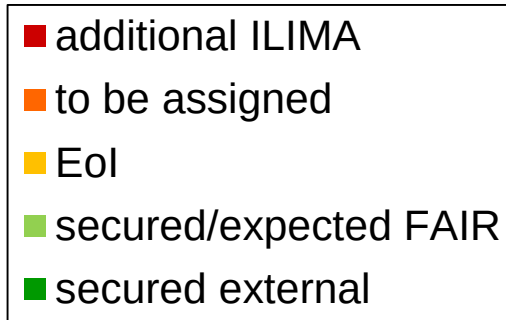
Status: Feb 2018 (kEUR, all in 2005 prices)

Status of NUSTAR experiment funding (MSV)



Status: February, 2018

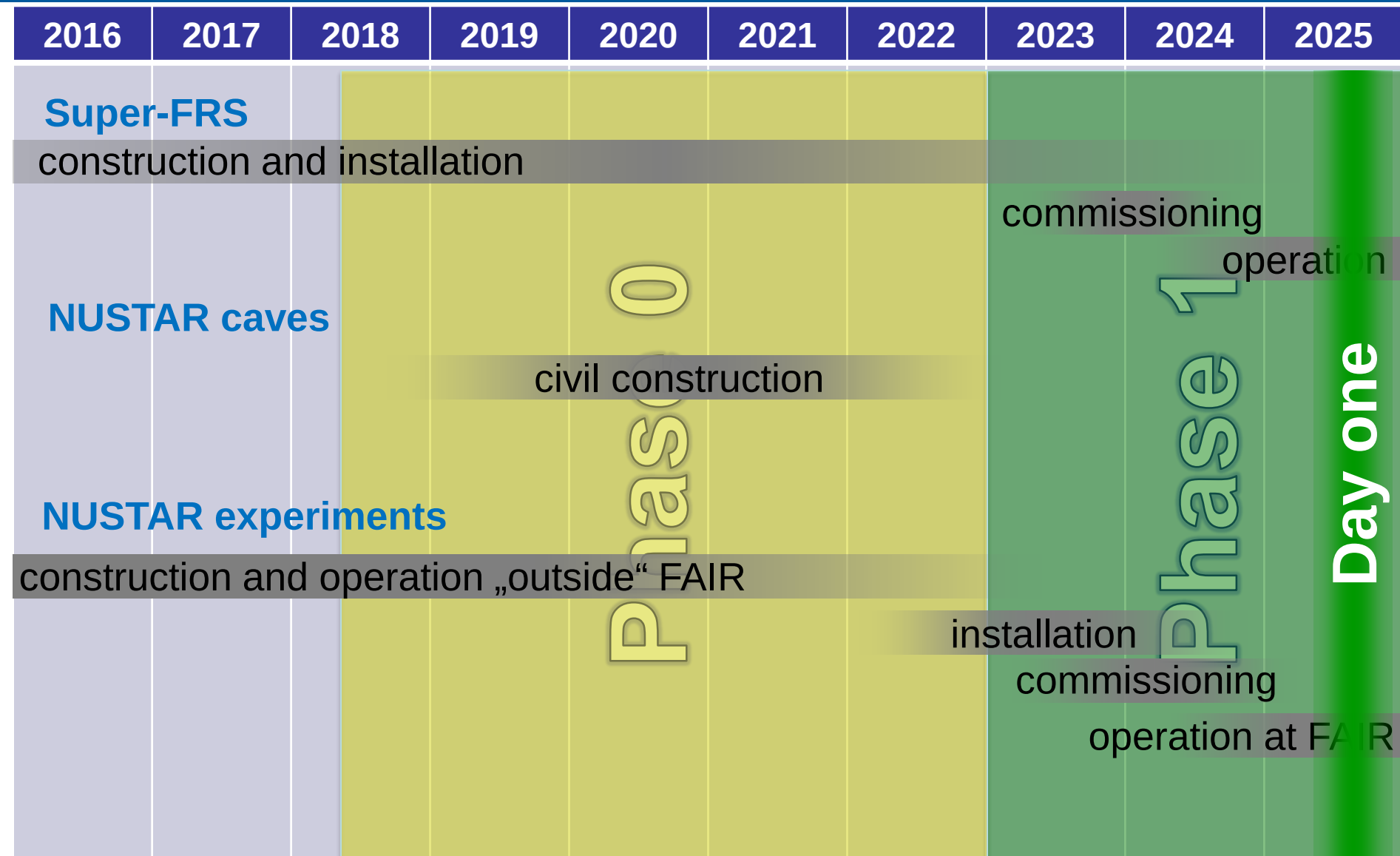
Evolution of NUSTAR project funding



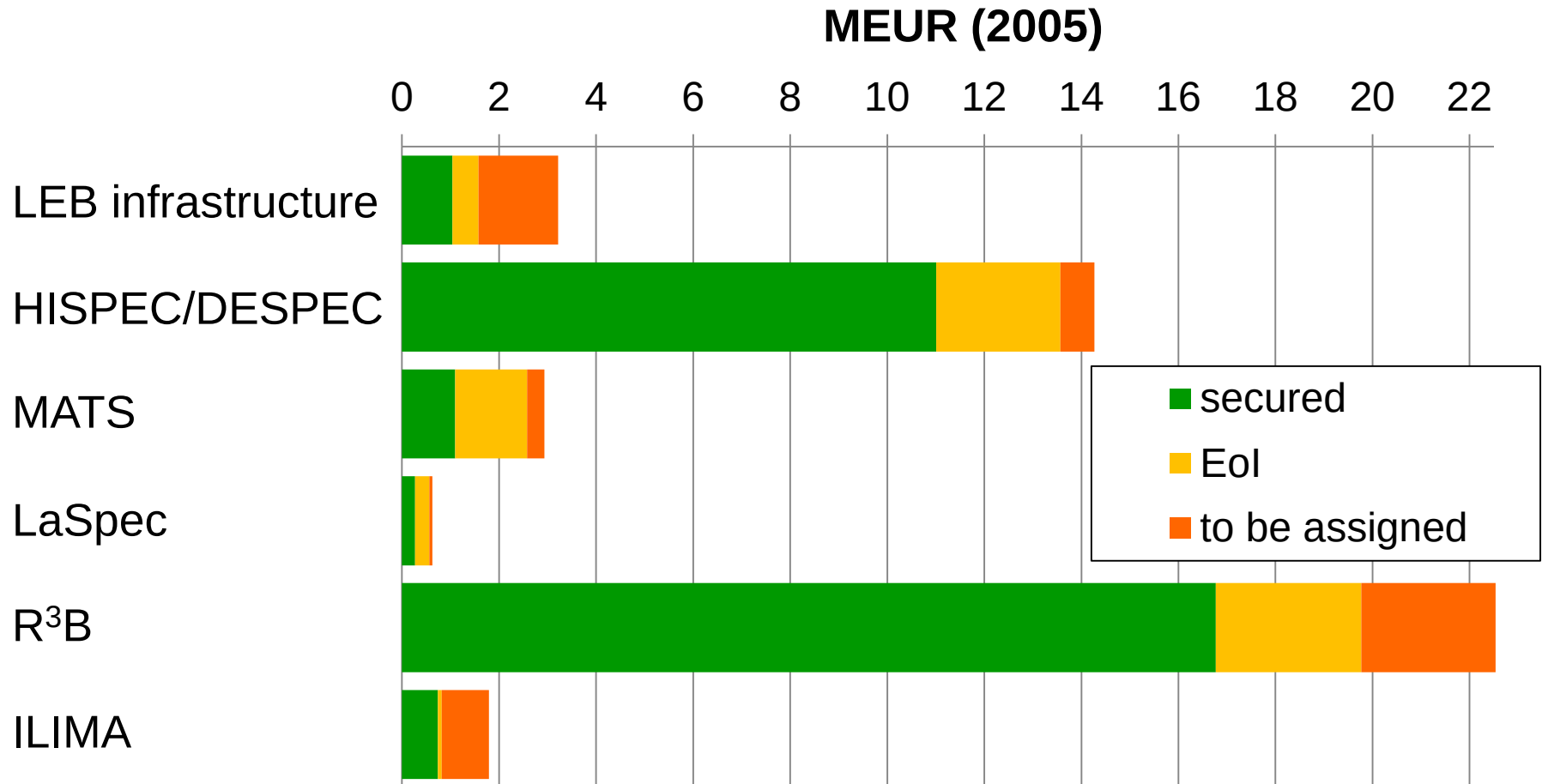
Note:

- GLAD with final cost
- UK included in FAIR

Scenario for NUSTAR: Day one



Status of NUSTAR experiment funding (MSV)

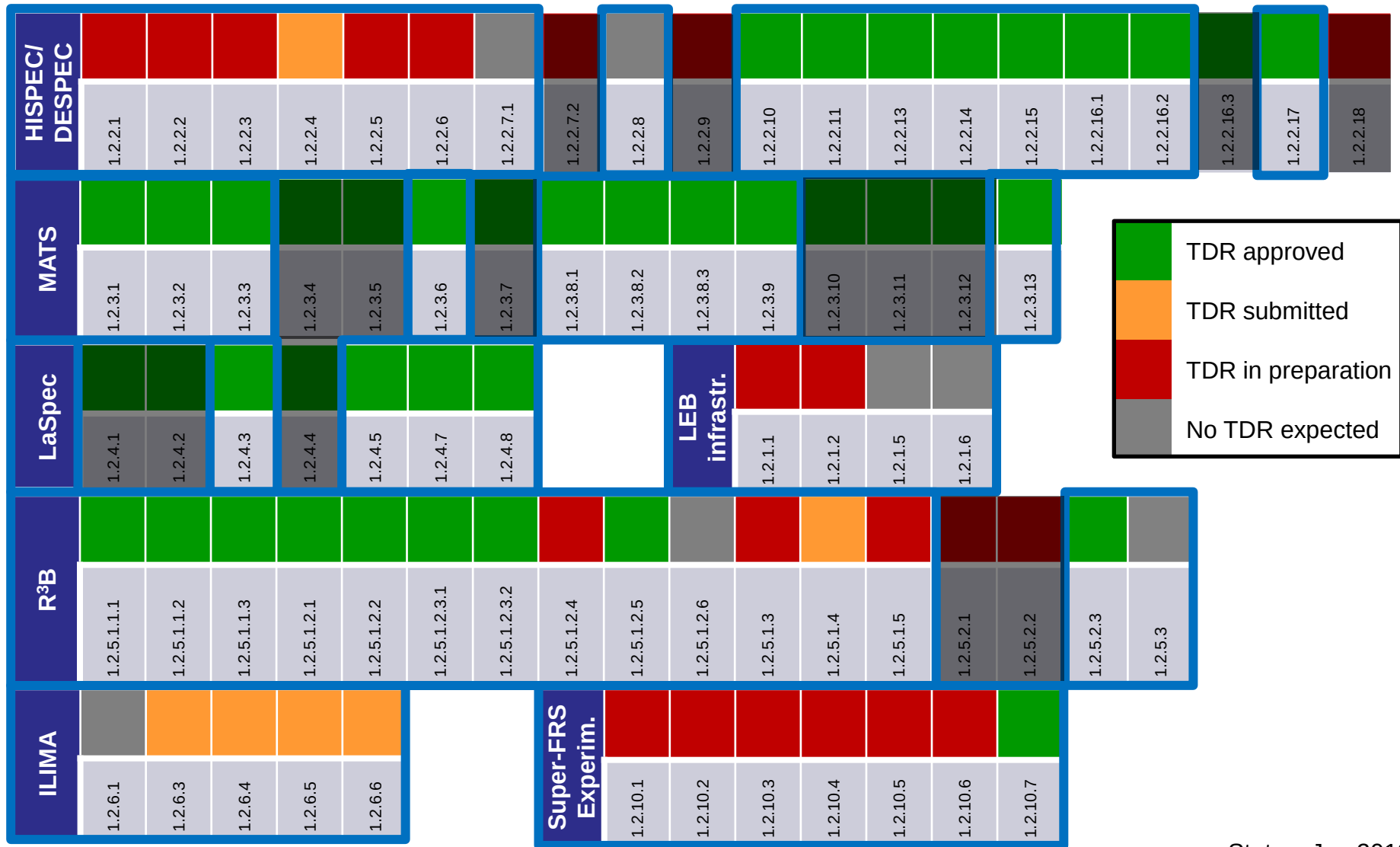


Status: February, 2018

	TDR approved
	TDR submitted
	TDR in preparation
	No TDR expected

Status: Jan 2018

NUSTAR work packages (Day one) – TDRs



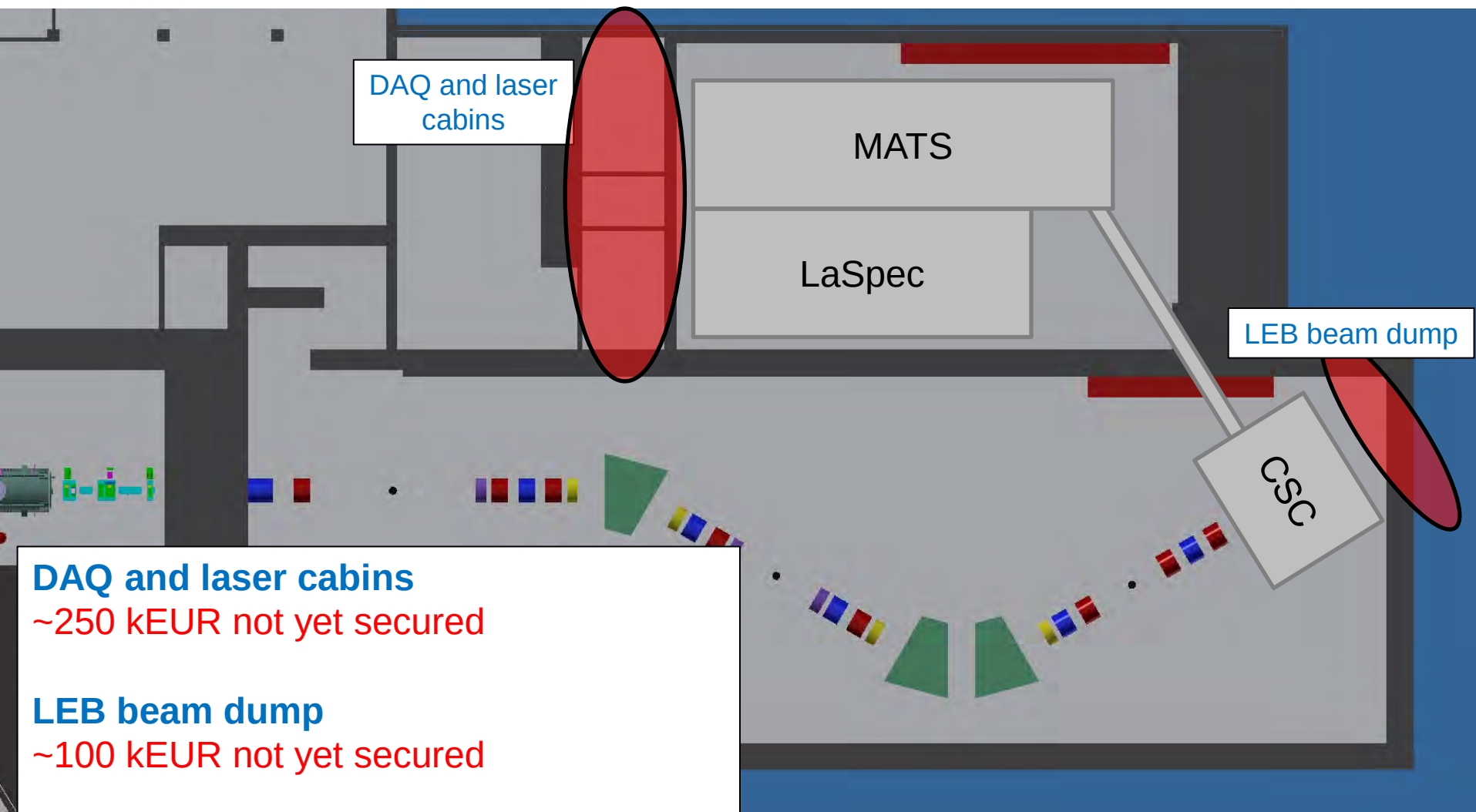
Status: Jan 2018



Pending TDRs



TDR #	title (or working title)	experiment	Date expected	NUSTAR phase
2	LEB stopping cell	LEB infrastructure	May 18	Day one
4	HISPEC/DESPEC infrastructure	HISPEC/DESPEC	Mar 18	Day one
26	Si tracker	R ³ B	Jan 19	Day one
29	R ³ B infrastructure	R ³ B	Aug 18	Day one
28	R ³ B vacuum	R ³ B	Aug 18	Day one
1	LEB infrastructure	LEB infrastructure	Nov 18	Day one
30	R ³ B spectrometer	R ³ B	Nov 19	Phase 2
7	Active target (India)	HISPEC/DESPEC	Nov 19	Phase 2
8	HYDE	HISPEC/DESPEC	Nov 19	Phase 2
18	Isomeric moments	HISPEC/DESPEC	Nov 19	Phase 2
37	Slowed down beam setup	HISPEC/DESPEC	Nov 19	Phase 2



DAQ and laser cabins

~250 kEUR not yet secured

LEB beam dump

~100 kEUR not yet secured

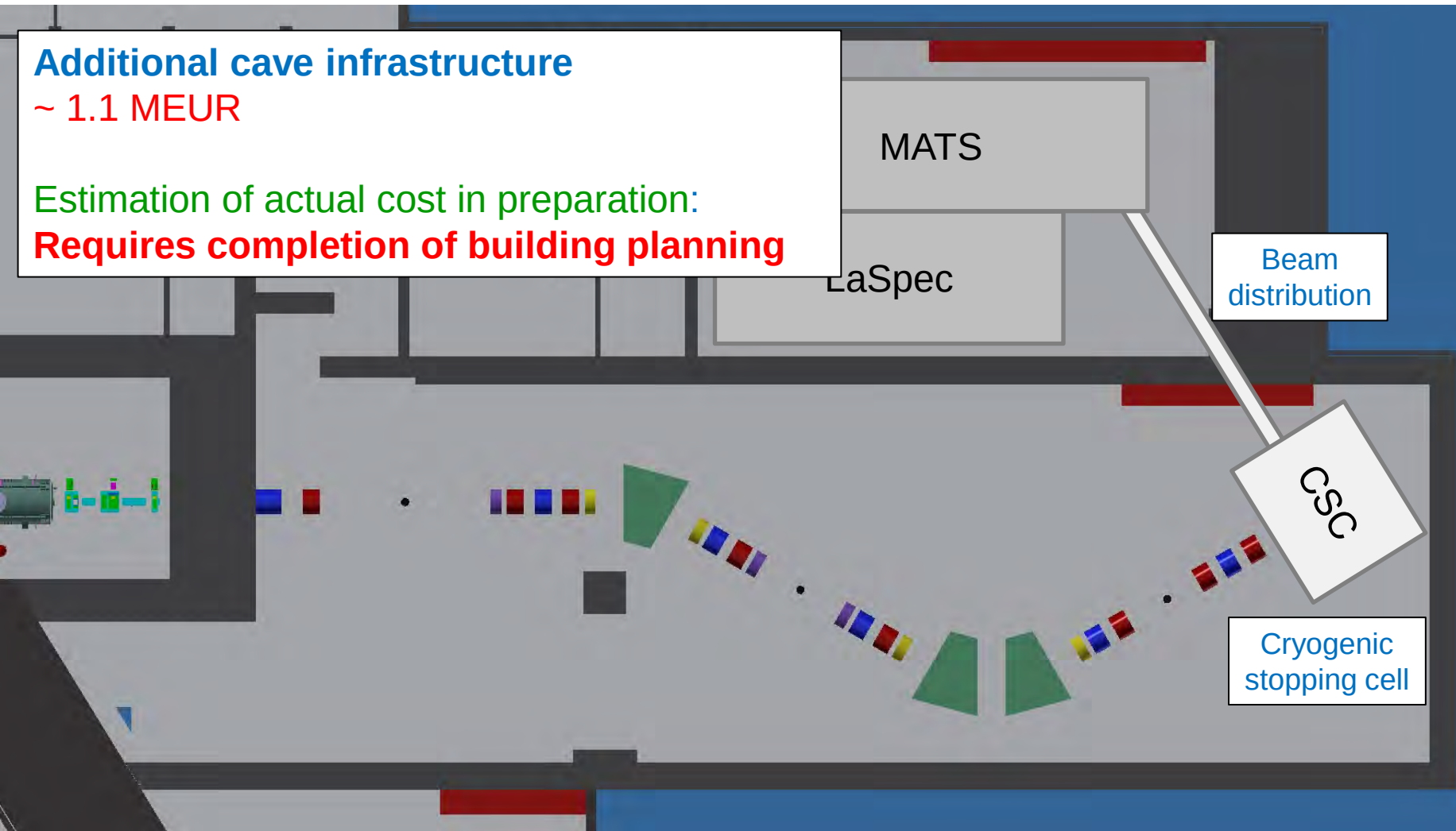
Cost estimate in preparation

Additional cave infrastructure

~ 1.1 MEUR

Estimation of actual cost in preparation:

Requires completion of building planning



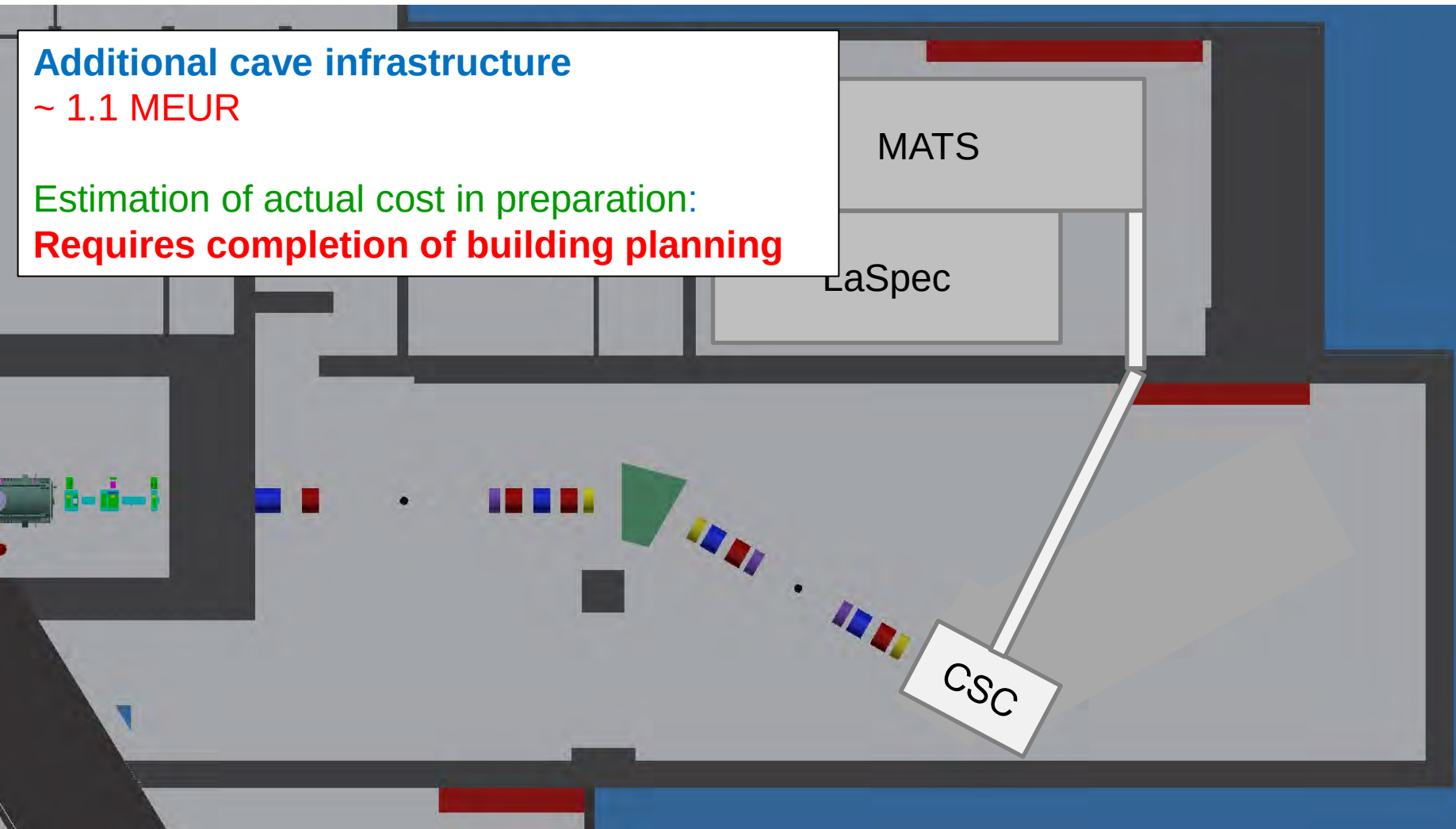
LEB infrastructure – staged energy buncher?

Additional cave infrastructure

~ 1.1 MEUR

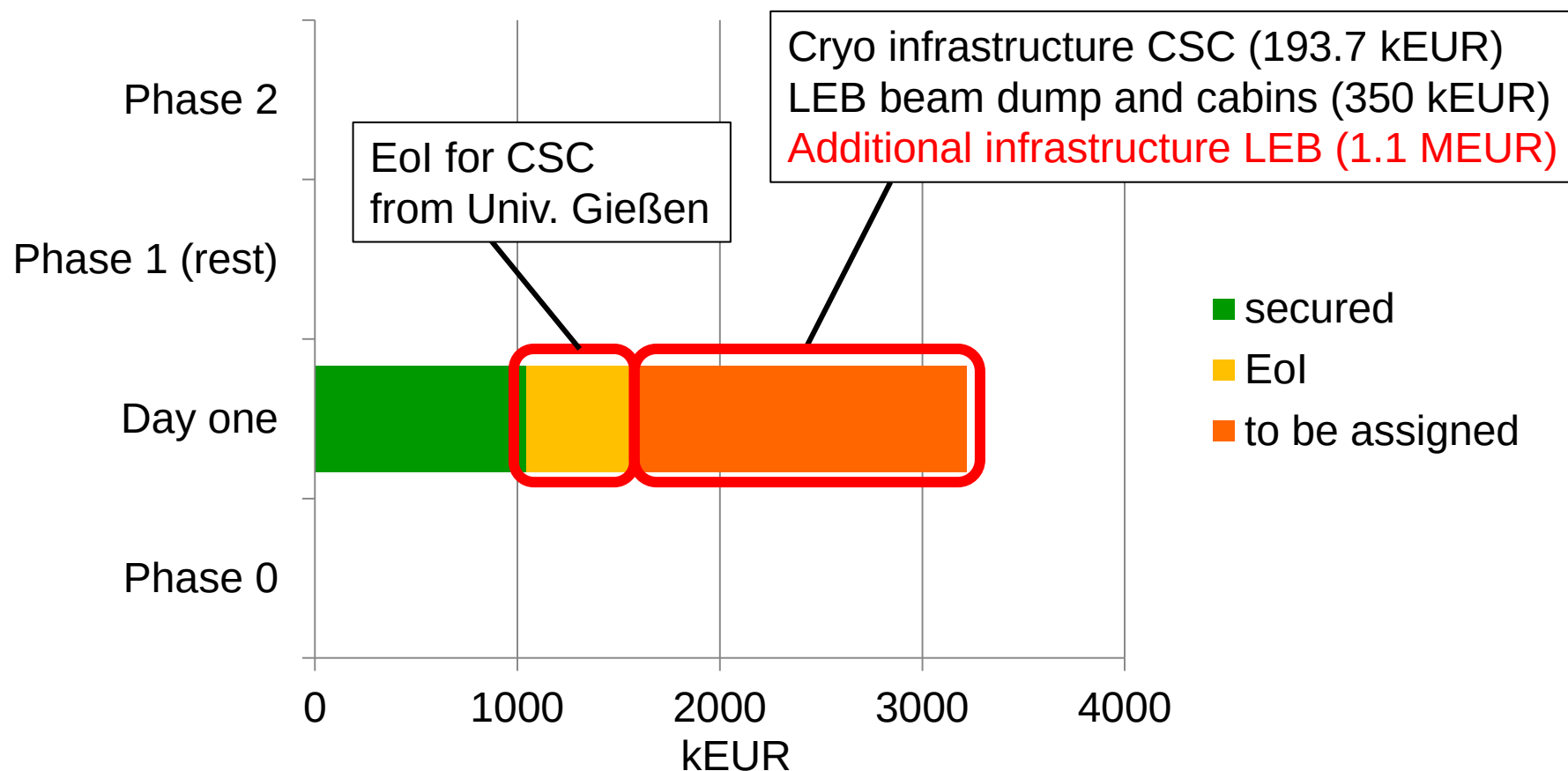
Estimation of actual cost in preparation:

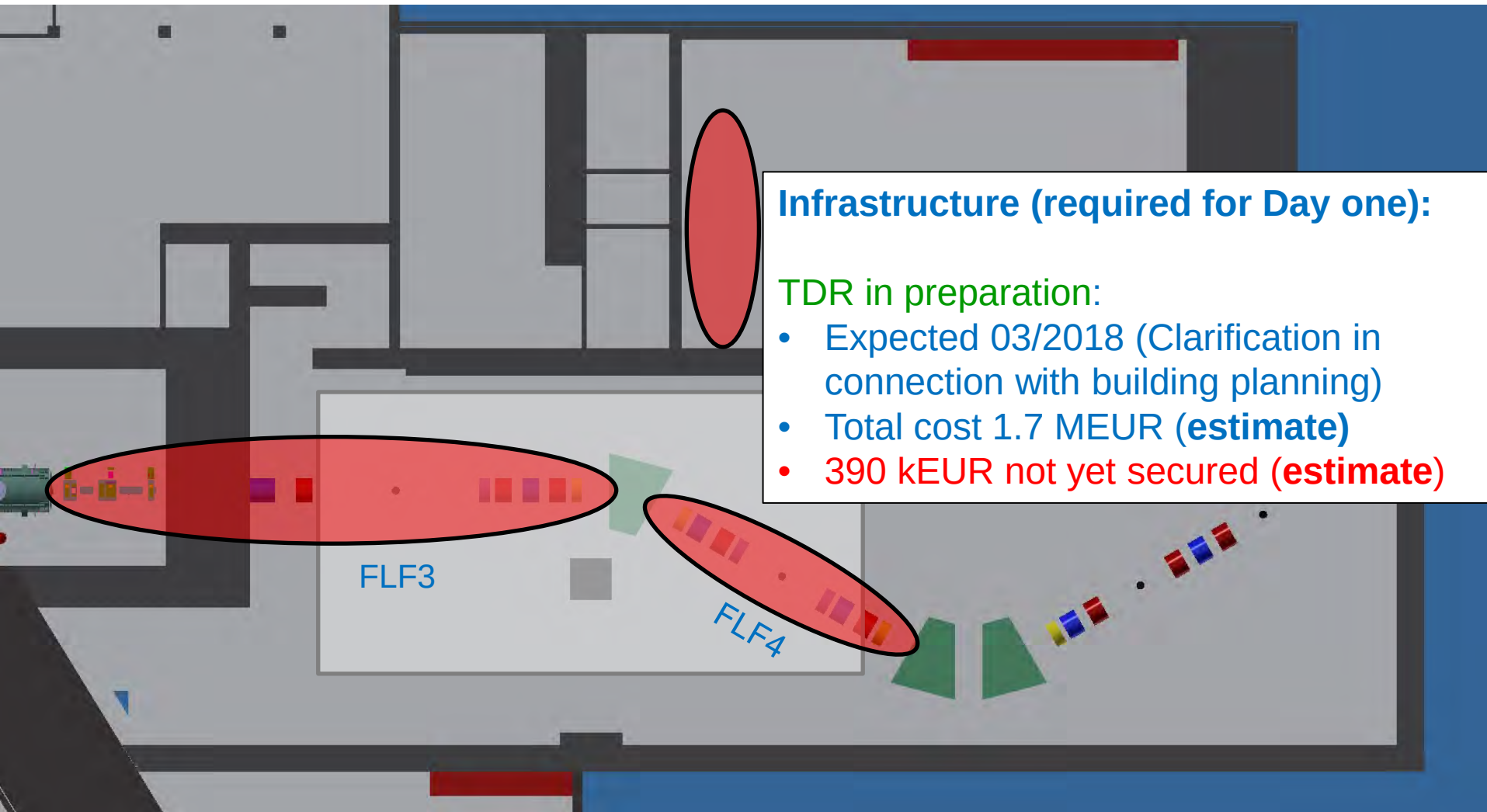
Requires completion of building planning



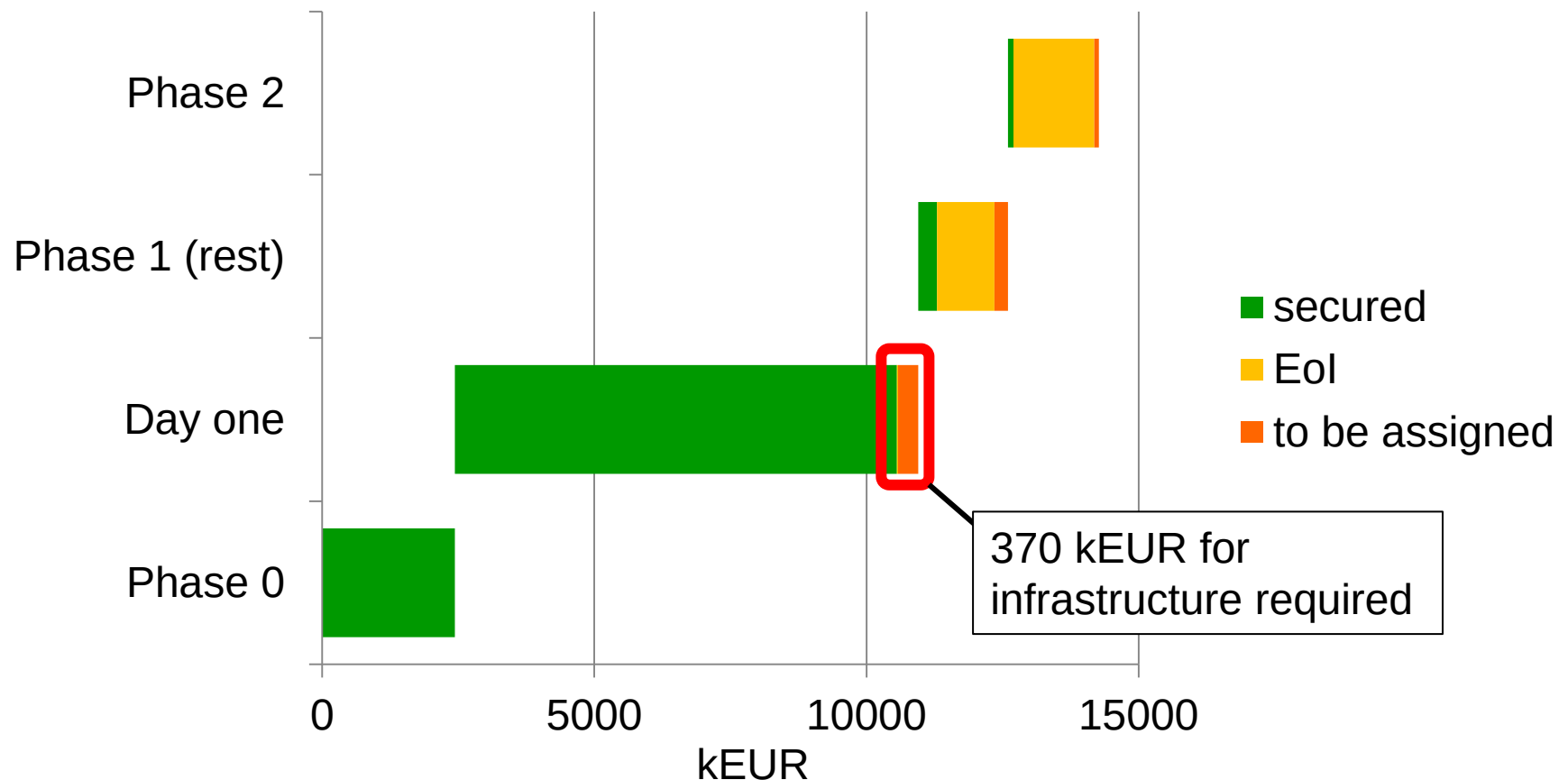
Under discussion with VECC ...

- TDRs required for clarification of cost
- Cost estimates expected in 05/2018 and 11/2018

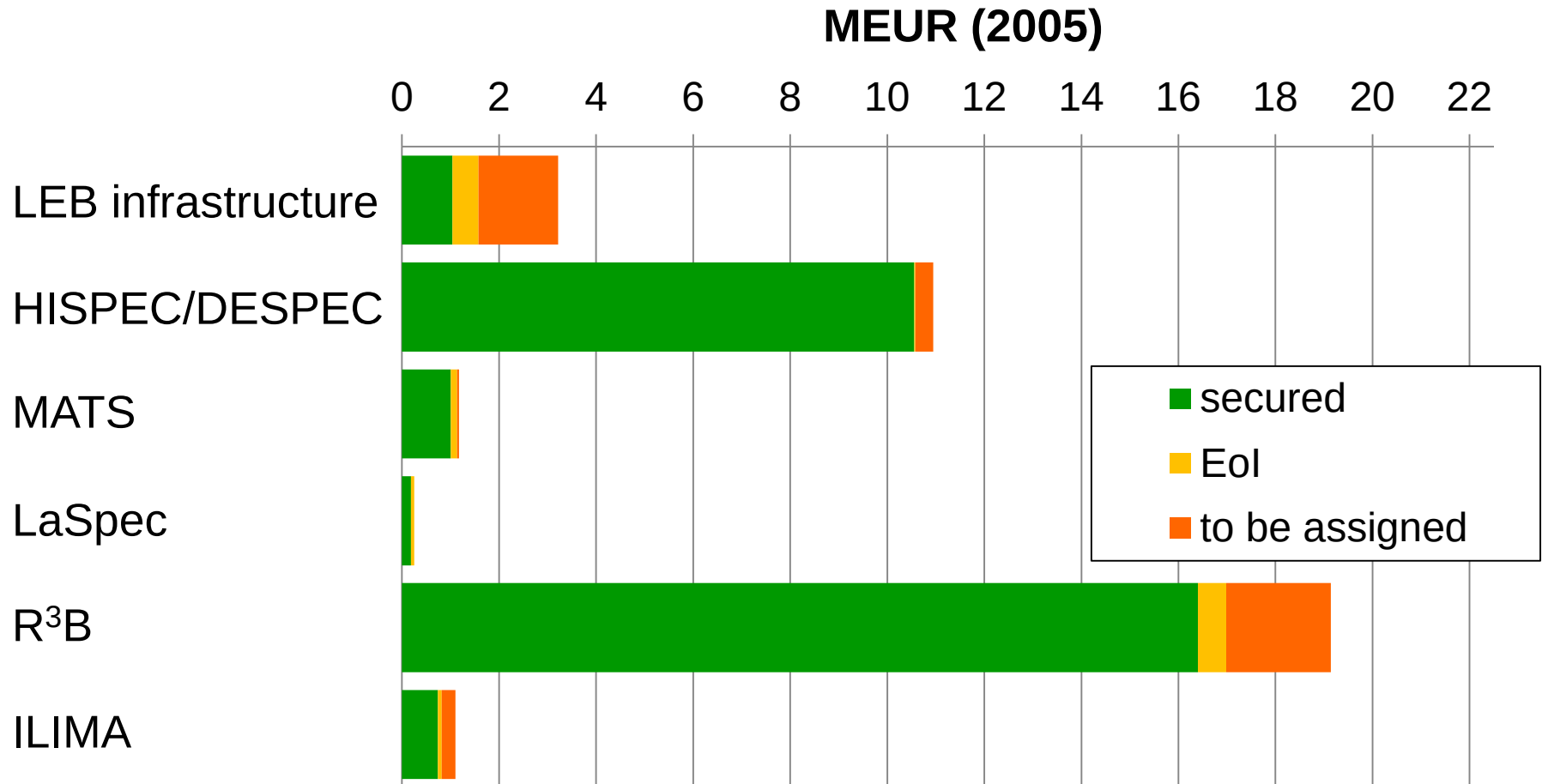




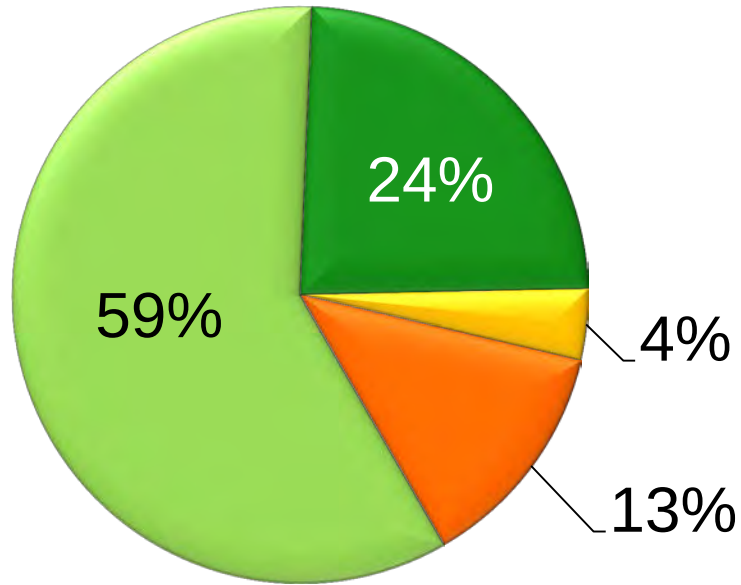
- **LEB cave** and HISPEC/DESPEC infrastructure to be clarified
- TDRs in preparation



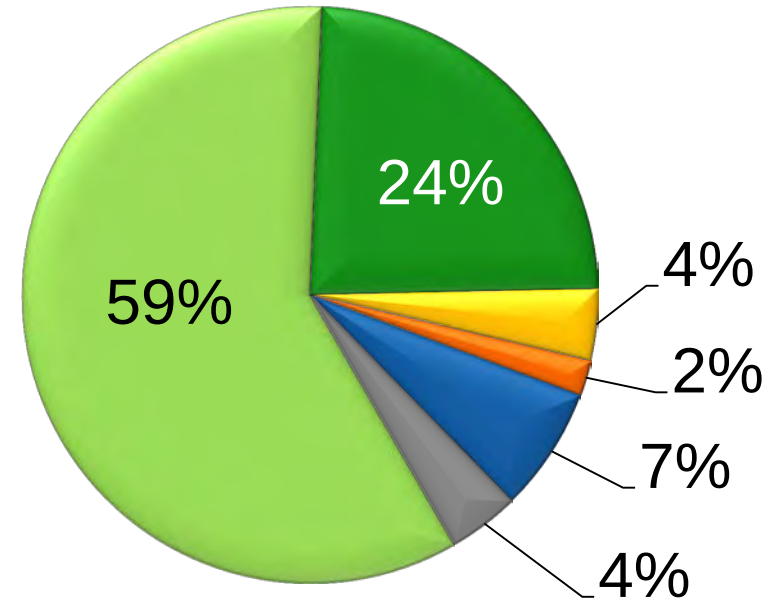
NUSTAR experiment funding (Day one)



Status: February, 2018



- secured/expected FAIR
- secured external
- Eol
- to be assigned



- secured/expected FAIR
- secured external
- Eol
- to be assigned
- Infrastructure Common Fund
- R3B multiplet

PSP	Name	cost (2005) [k€]
1.2.1.1	LEB infrastructure (Slow beamline and spectrometer)	1,100.0
1.2.1.2.3	CSC infrastructure	193.7
1.2.1.5	LEB cabins for DAQ, controls and lasers	250.0
1.2.1.6	LEB beam dump	100.0
1.2.5.1.1.3	R ³ B magnet infrastructure	756.3
1.2.5.3	HEB beam dump	100.0
NUSTAR Subtotal		2,500.0

- TDRs in preparation
- Cost to be clarified
 - end of Q2/2018 cost update and further details expected

In-kind and Collaboration Contracts



Country	Experiment	Description	in-kind value	requested?	specs?	contract?	signed?
Finland	HISPEC/DESPEC	DEGAS stage 2	268	yes	Draft	no	no
	HISPEC/DESPEC	MONSTER	119.9	yes	Draft	Draft	no
	MATS	RFQ	215.2	yes	no	no	no
	LaSpec	Laser-based beam preparation	106.4	yes	no	no	no
France	R3B	GLAD	2530	yes	Draft	Draft	no
Germany	HISPEC/DESPEC	DEGAS stage 1	390	yes	no	no	no
	HISPEC/DESPEC	DEGAS stage 2	100	yes	no	no	no
	R3B	GLAD	2530	yes	Draft	Draft	no
	R3B	NeuLAND stage 1	390	yes	no	no	no
India	HISPEC/DESPEC	DEGAS	1410	yes	yes	Draft	no
	HISPEC/DESPEC	MONSTER	560	yes	yes	Draft	no
	MATS	Preparation Penning Trap	40	yes	no	no	no
Romania	HISPEC/DESPEC	FATIMA	100	yes	no	no	no
	HISPEC/DESPEC	Plunger	122.5	yes	no	no	no
Russia	R3B	ACTAF – Small chamber ACTAF 2	174.7	yes	no	no	no
	R3B	NeuLAND - HV distribution system	415	yes	yes	yes	yes
	R3B	CALIFA endcap – iPhos detection modules	300	yes	yes	Draft	no
	R3B	Proton arm spectrometer	489.3	yes	yes	yes	no
Sweden	HISPEC/DESPEC	DEGAS stage 2	450	yes	no	no	no
	HISPEC/DESPEC	LYCCA	150	yes	no	no	no
	R3B	CALIFA barrel stage 1	399.2	yes	yes	Draft	no
	R3B	CALIFA forward endcap	575.8	yes	no	no	no
United Kingdom	HISPEC/DESPEC	AIDA	975	yes	no	no	no
	HISPEC/DESPEC	DTAS	84	yes	no	no	no
	HISPEC/DESPEC	FATIMA	464.6	yes	no	no	no
	HISPEC/DESPEC	LYCCA	705.4	yes	no	no	no

TDR plan

1.2.X	M3	TDR approved
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NUSTAR management

work package plan (level 4)

Phase 0 components (optional)

1.2.X.Y.1	AE1	prepare funding request
1.2.X.Y.1	ME1	funding established
1.2.X.Y.1	A92	component construction
1.2.X.Y.1	M9	FAT component accepted

1.2.X.Y.2	AE1	prepare funding request
1.2.X.Y.2	ME1	funding established
1.2.X.Y.2	A92	component construction
1.2.X.Y.2	M9	FAT component accepted

1.2.X.Y.3	A4	prepare contract
1.2.X.Y.3	M4	contract signed
1.2.X.Y.3	A92	component construction
1.2.X.Y.3	M9	FAT component accepted

Phase 1 components

1.2.X.Y.4	AE1	prepare funding request
1.2.X.Y.4	ME1	funding established
1.2.X.Y.4	A92	component construction
1.2.X.Y.4	M9	FAT component accepted

...

1.2.X.Y.n	AE1	prepare funding request
1.2.X.Y.n	ME1	funding established
1.2.X.Y.n	A92	component construction
1.2.X.Y.n	M9	FAT component accepted

Work package (Phase 1)

1.2.X.Y	ME1	funding established
1.2.X.Y	A92	assembly of components (optional if integration of sub-components is needed)
1.2.X.Y	M9	FAT accepted

Work package leader

Experiment plan (level 3)

Phase 1

Work package ready for delivery?

1.2.X.Y	M9	hard link
1.2.X.Y	M91	start of shipment
1.2.X.Y	ATS	shipment to FAIR
1.2.X.Y	M92	End of shipment
1.2.X.Y	A10	assembly (if needed) and SAT Aa
1.2.X.Y	M10	SAT A accepted approval for installation in cave

Cave ready for installation?

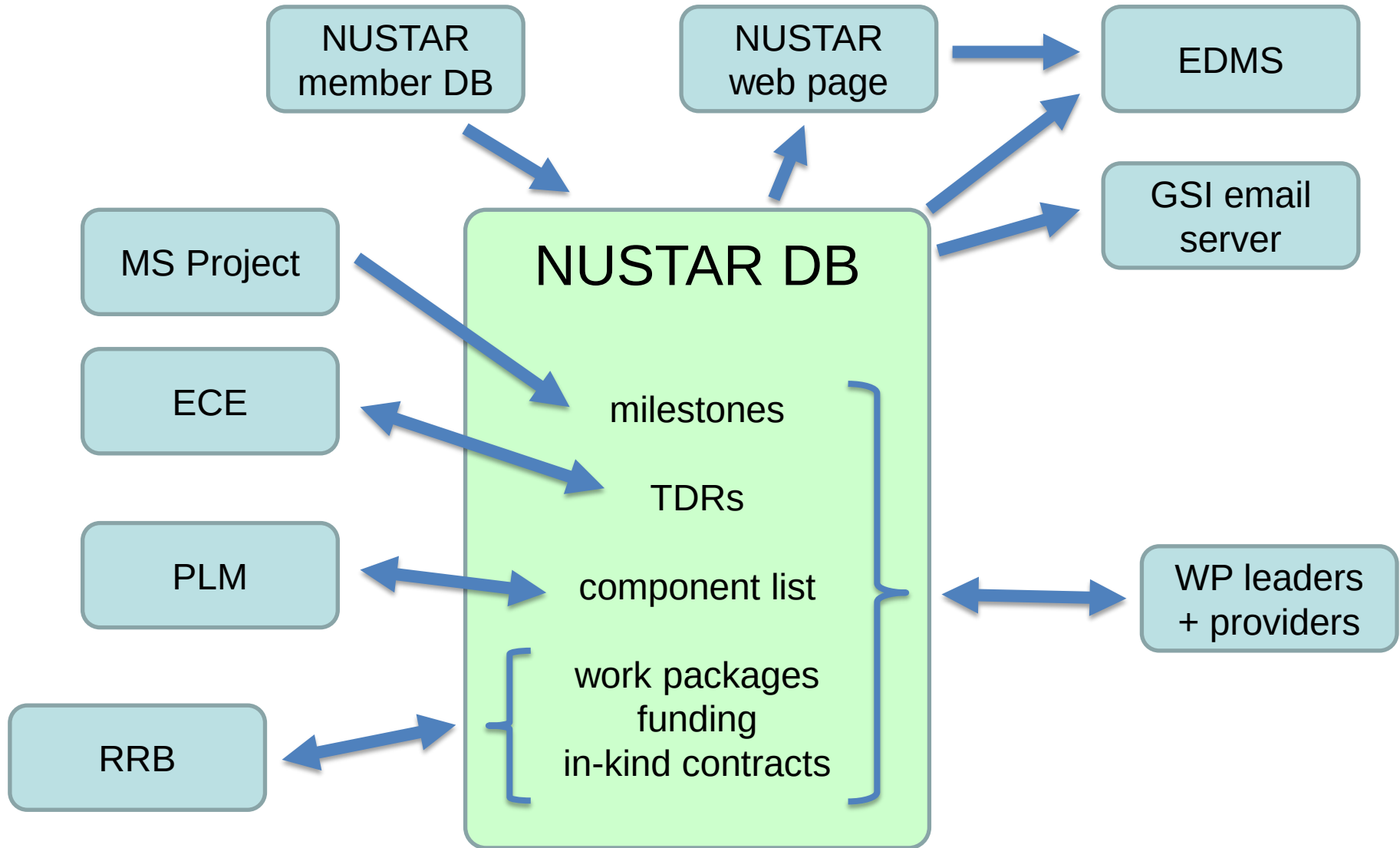
1.2.X.Y	A112	installation in cave
1.2.X.Y	M11	SAT Ba accepted and ready for beam
1.2.X.Y	A12	on-line test and SAT Bb
1.2.X.Y	M12	SAT Bb accepted and ready for operation

...

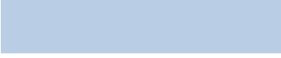
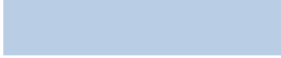
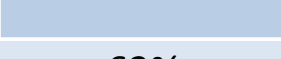
1.2.X.Z	M9	hard link
1.2.X.Z	M91	start of shipment
1.2.X.Z	ATS	shipment to FAIR
1.2.X.Z	M92	End of shipment
1.2.X.Z	A10	assembly (if needed) and SAT Aa
1.2.X.Z	M10	SAT A accepted approval for installation in cave
1.2.X.Z	A112	installation in cave
1.2.X.Z	M11	SAT Ba accepted and ready for beam
1.2.X.Z	A12	on-line test and SAT Bb
1.2.X.Z	M12	SAT Bb accepted and ready for operation

Project manager/Technical Director

NUSTAR database – keep track of project



Status report for experiments – draft

	Component/ Sub-System	TDR	Cost [k€ 2005]	Funding	Construction	Date completion	Test/ Commissioning
Phase 1 - Day-one	R3B multiplet		1450			10/2022	
	GLAD		6878			11/2015	
	magnet infrastr.		756			10/2022	
	tracking		918			03/2023	
	vacuum		180			06/2022	
	DAQ		637			02/2021	
	infrastructure		230			07/2021	
	CALIFA (start)		2968			03/2021	
	NeuLAND (start)		2595			03/2021	
	Si tracker		2213			02/2022	
	Active target 2		315			02/2020	
		83% value weighted	19140	86% secured	62% value weighted		

DRAFT

- NUSTAR member list updated?
In progress (new database operational)
- All TDRs for “**Day one**” at least submitted?
Still some TDRs needed ...
- All work packages relevant for “**Day one**” assigned to partner institute?
Trying to **find new partners** ... **Common fund?**
- Funding clarified (in terms of “accepted” Eols)?
Partly need to wait for TDRs ... **Common fund?**
- Interfaces clarified (connections to accelerator and civil construction)?
In progress (as part of planning) ...
- General conditions for experiments?
In discussion with FAIR management ... **Draft available!**

- Based on CERN document
- Under review by FAIR/GSI management
- Some aspects still require clarification:
 - Team accounts
 - Users and teams (Users' office)

General Conditions Applicable to Experiments Performed at FAIR December 12, 2017

FAIR

Facility for Antiproton and Ion Research in Europe

GENERAL CONDITIONS

applicable to

EXPERIMENTS

Performed at

the Facility for Antiproton and Ion Research in Europe

FAIR

DRAFT