

NUSTAR financial status

13th FAIR-NUSTAR Resources Review Board
FAIR/GSI, Darmstadt, Germany

Alexander Herlert
NUSTAR Resource Coordinator
FAIR



Finland



France



Germany



India



Poland



Romania



Russia



Slovenia



Sweden



UK



Czech Republic

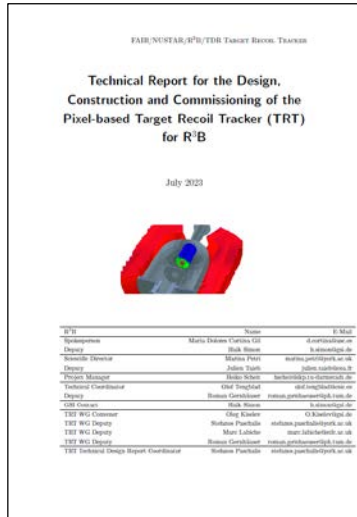


- **NUSTAR funding**

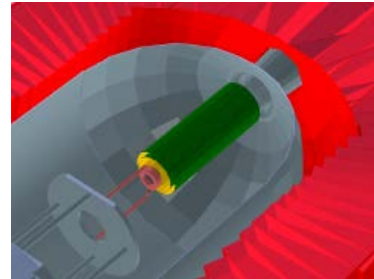
- Recent main changes (since 12th meeting)
- Status of secured funding and intended funding
- NUSTAR Construction Common Fund and item list
 - Present status of payments and expenditures

- Common infrastructure
 - Cryogenic Stopping Cell (CSC) received **additional funding** from BMBF-VF, Germany (75.1 kEUR in 2005)
 - **CSC fully funded**
- HISPEC/DESPEC
 - Funding of the detector system **gSPEC** has been **updated**, funding for core system is **secured** (CNRS-IN2P3, France, 262 kEUR in 2005).
- R³B
 - TDR of **Taget Recoil Tracker (TRT, formerly: Si tracker) in review** (ECE/ECSSG), approval expected soon
 - **Additional funding**
 - NeuLAND (BMBF-VF, Germany: 245.7 kEUR in 2005)
 - *Note: The contribution from Univ. Cologne (PSP 1.2.5.1.2.5.2.5, 112.2 kEUR) was not included in the submitted RRB documents*
 - CALIFA (BMBF-VF, Germany: 27.1 kEUR)
 - Tracking Detectors (BMBF-VF, Germany: 75.0 kEUR in 2005)

- Super-FRS EC
 - Batch 2 of additional GADAST modules for EXPERT detector system received **secured funding** (MSMT, Czech Republic: 160 kEUR in 2005)
 - *Note: This was not included in the submitted RRB documents (PSP 1.2.10.7.1.2)*



TDR submitted 08/2023 ... report pending ...



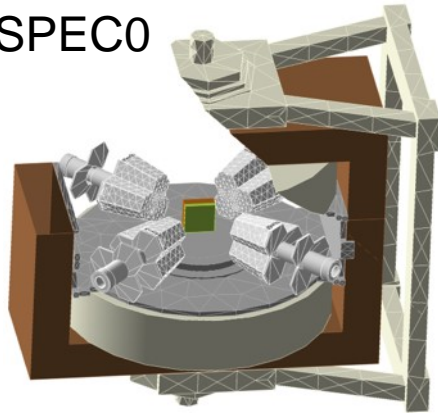
TRT stage 2

preliminary funding scheme

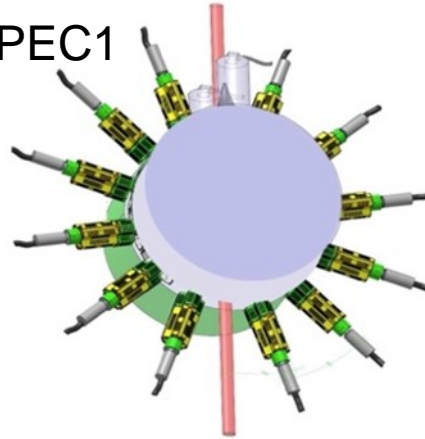
PSP code	Contribution	Institute	Country	FAIR/ext	Staging step	cost (kEUR 2005)	status
1.2.5.1.2.4.1	TRT (1st share)	Univ. York	United Kingdom	FAIR	ES	1138.8	secured
1.2.5.1.2.4.2	TRT (2nd share)	STFC Daresbury	United Kingdom	FAIR	ES	1138.8	secured
1.2.5.1.2.4.3	TRT (3rd share)	Univ. Vigo	Spain	ext	ES	111.5	EoI
1.2.5.1.2.4.4	TRT (4th share)	Univ. Liverpool	United Kingdom	ext	ES	111.5	EoI
						2500.6	

Cost-matrix **updated** accordingly ...

gSPEC0



gSPEC1



TDR expected 06/2024

gSPEC: R. Lozeva et al., HI 240, 55 (2019)

Cost-matrix updated ...

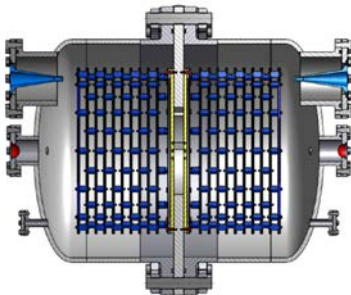
Note: This new detailed funding scheme was not included in the submitted RRB documents

PSP code	Description	Cost (kEUR)	Institute	Country	Funding	Status
1.2.2.18	gSPEC	312.0				
1.2.2.18.1.1	gSPEC-0 (1st share)	21.5	IJCLab	France	IJCLab	secured
1.2.2.18.1.2	gSPEC-0 (2nd share)	3.0	IJCLab	France	IN2P3	secured
1.2.2.18.2.1	gSPEC-1 (1st share)	78.3	IJCLab	France	IN2P3	secured
1.2.2.18.2.2	gSPEC-1 (2nd share)	78.3	IPHC Strasbourg	France	IN2P3	secured
1.2.2.18.2.3	gSPEC-1 (3rd share)	50.0	Australian National Univ.	Australia		Eol
1.2.2.18.3.1	gSPEC Support structure (1st share)	12.2	IJCLab	France	IJCLab	secured
1.2.2.18.3.2	gSPEC Support structure (2nd share)	3.0	IJCLab	France	IN2P3	secured
1.2.2.18.4.1	gSPEC HPGe detectors (1st share)	4.6	IJCLab	France	IJCLab	secured
1.2.2.18.4.2	gSPEC HPGe detectors (2nd share)	10.4	IJCLab	France	IN2P3	secured
1.2.2.18.4.3	gSPEC HPGe detectors (3rd share)	4.6	IPHC Strasbourg	France	IPHC	secured
1.2.2.18.4.4	gSPEC HPGe detectors (4th share)	10.4	IPHC Strasbourg	France	IN2P3	secured
1.2.2.18.5.1	gSPEC Ancillary detectors (1st share)	6.3	IJCLab	France	IJCLab	secured
1.2.2.18.5.2	gSPEC Ancillary detectors (2nd share)	14.2	IJCLab	France	IN2P3	secured
1.2.2.18.6.1	gSPEC Electronics and DAQ (1st share)	3.1	IJCLab	France	IJCLab	secured
1.2.2.18.6.2	gSPEC Electronics and DAQ (2nd share)	4.5	IJCLab	France	IN2P3	secured
1.2.2.18.6.3	gSPEC Electronics and DAQ (3rd share)	3.1	IPHC Strasbourg	France	IPHC	secured
1.2.2.18.6.4	gSPEC Electronics and DAQ (4th share)	4.5	IPHC Strasbourg	France	IN2P3	secured

- Re-procurement of former Russian in-kind
 - Change of technical design of Proton Arm Spectrometer **approved**
 - FAIR tender budget **secured**
 - Procurement of components **started**
- Update of CALIFA funding
 - Technical “difficulty” of CEPA part of CALIFA forward -> **risk item**
 - Sweden considers to **re-allocate funding** from forward to barrel part with the **aim to fully fund** CALIFA barrel
 - For forward detector part additional R&D required. Existing crystals to be used temporarily as mitigating action until technical realization clarified.
- Update of DEGAS funding
 - The DEGAS funding scheme (which institute provides which components) is presently reviewed. An update is expected for the next RRB meeting.

- Funding secured via FAIR budget:
 - No change of procurement plan or required budget
 - ACTAF
 - *Detailed project plan expected (including component list)*
 - PAS (proton arm spectrometer)
 - **TDR addendum approved** (*R³B tracking detectors*) (*R³B collaboration thanks the review panel for fast process*)
 - *Procurement of critical components started (to keep timeline)*
 - NeuLAND HV
 - *Waiting for details on repair of HV modules*

ACTAF



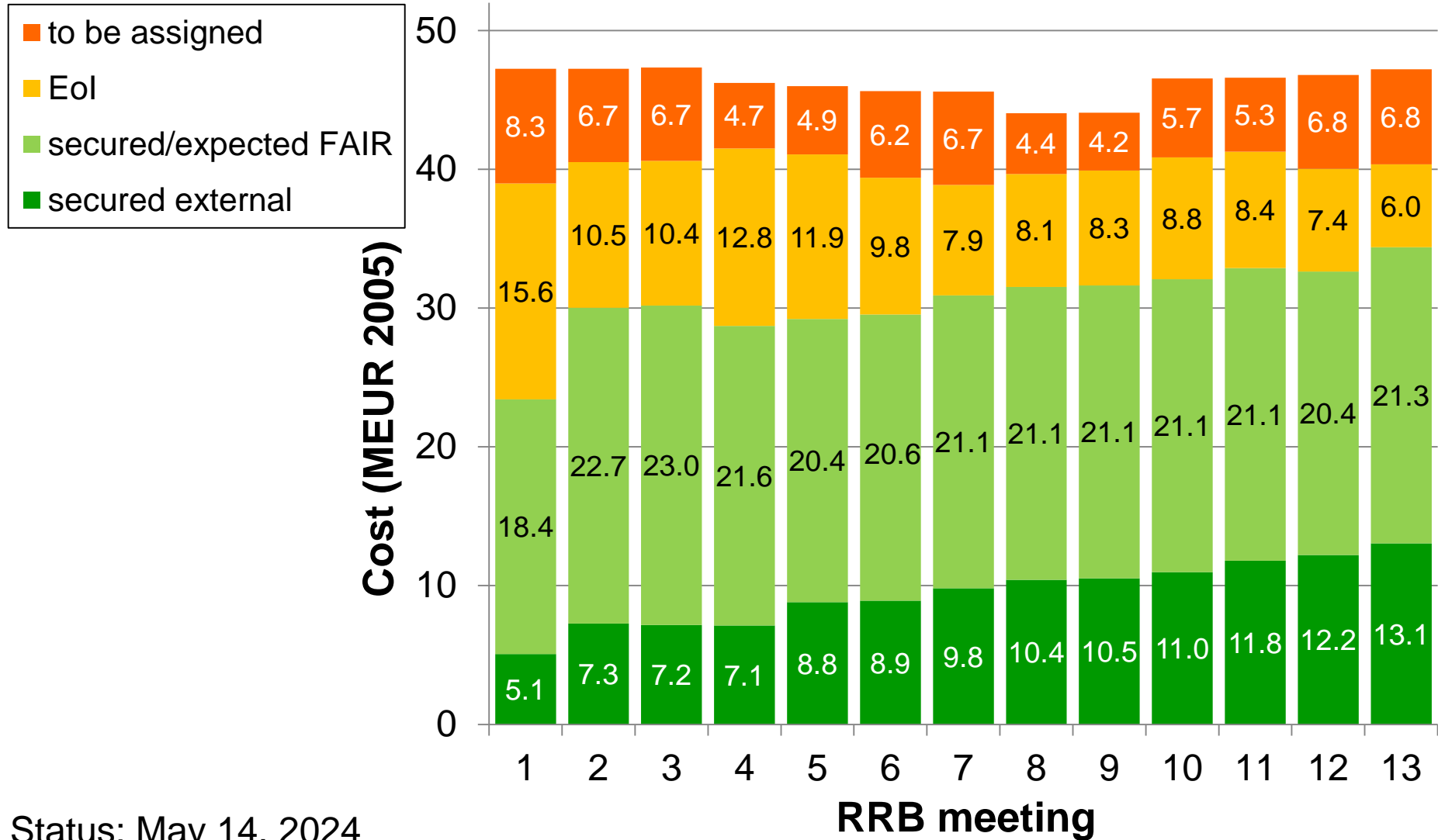
Proton Arm Spectrometer



NeuLAND HV



Evolution of NUSTAR project funding (MSV)

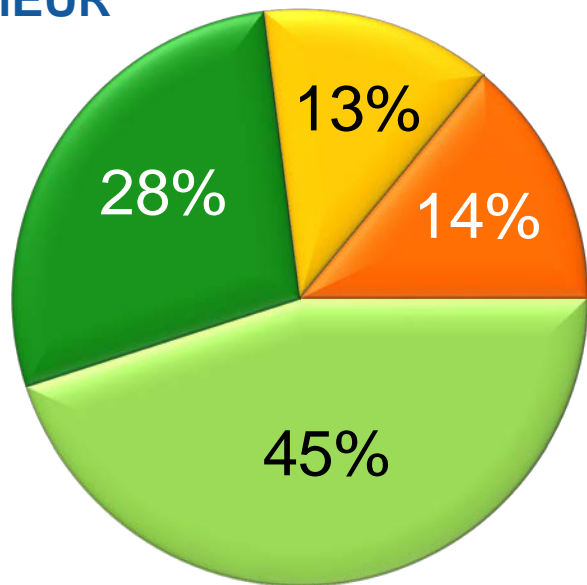


Status: May 14, 2024

NUSTAR MSV – funding status



47.2 MEUR



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

- core funding (secured and expected) from: (**FAIR funding** in bold face)

- Australia
- Belgium⁺
- Bulgaria
- Canada
- Czech Republic
- **FAIR****
- **Finland**
- **France**
- **Germany**
- Hungary
- **India**
- Israel
- Italy⁺
- Japan
- Netherlands
- **Poland**
- **Romania**
- **Russia***
- Slovenia
- Spain
- **Sweden**
- Turkey⁺
- **United Kingdom**

⁺Beyond Day-one configuration

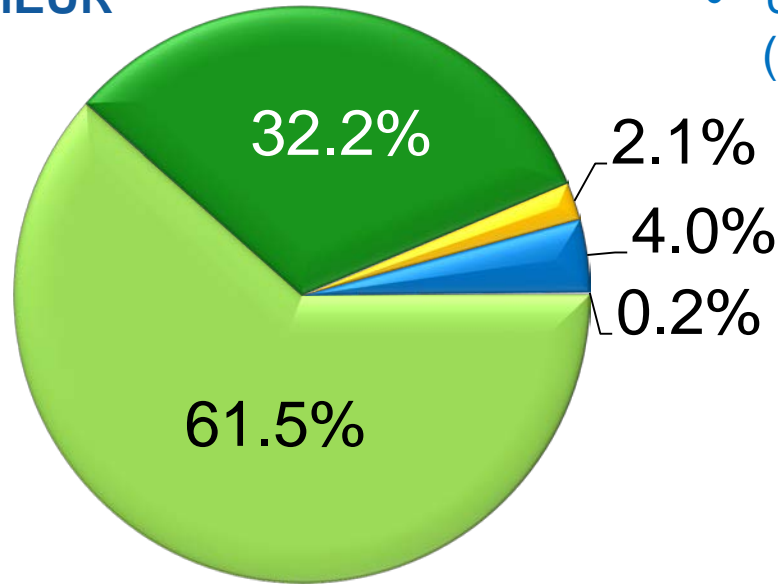
^{*}suspended (incl. JINR – Int. Org.)

^{**}cash contribution

Status: May 14, 2024

Day-one configuration – funding status

34.7 MEUR



- secured/expected FAIR
- secured external
- EoI
- Common Fund
- to be assigned

- core funding (secured and expected) from: **(FAIR funding in bold face)**

- | | |
|------------------------|-------------------------|
| ■ Australia | ■ Italy ⁺ |
| ■ Belgium ⁺ | ■ Japan |
| ■ Bulgaria | ■ Netherlands |
| ■ Canada | ■ Poland |
| ■ Czech Republic | ■ Romania |
| ■ FAIR** | ■ Russia* |
| ■ Finland | ■ Slovenia |
| ■ France | ■ Spain |
| ■ Germany | ■ Sweden |
| ■ Hungary | ■ Turkey ⁺ |
| ■ India | ■ United Kingdom |
| ■ Israel | |

⁺Beyond Day-one configuration

^{*}suspended (incl. JINR – Int. Org.)

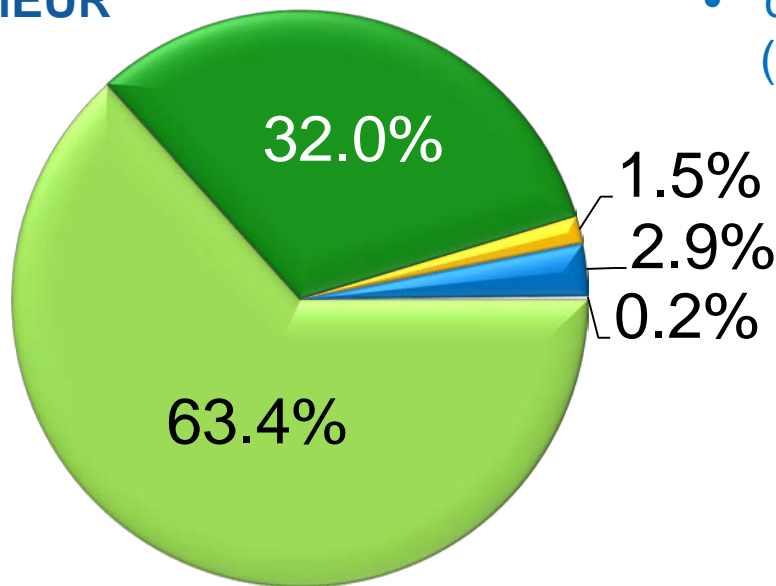
^{**}cash contribution

Status: May 14, 2024

ES / FS staging steps – funding status



32.8 MEUR



- secured/expected FAIR
- secured external
- EoI
- Common Fund
- to be assigned

- core funding (secured and expected) from: **(FAIR funding in bold face)**

- | | |
|------------------------|-------------------------|
| ■ Australia | ■ Italy ⁺ |
| ■ Belgium ⁺ | ■ Japan |
| ■ Bulgaria | ■ Netherlands |
| ■ Canada | ■ Poland |
| ■ Czech Republic | ■ Romania |
| ■ FAIR** | ■ Russia* |
| ■ Finland | ■ Slovenia |
| ■ France | ■ Spain |
| ■ Germany | ■ Sweden |
| ■ Hungary | ■ Turkey ⁺ |
| ■ India | ■ United Kingdom |
| ■ Israel | |

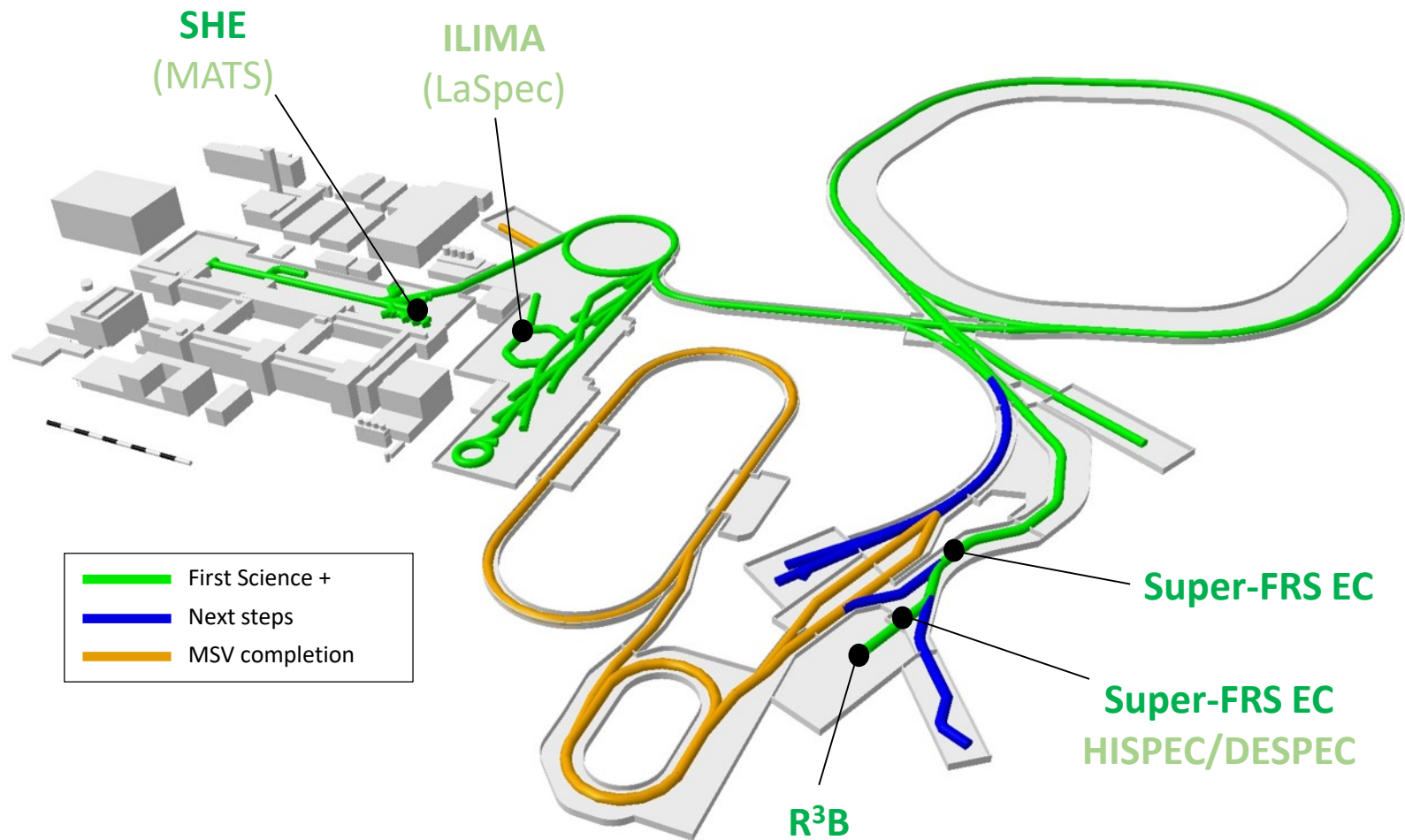
⁺Beyond Day-one configuration

^{*}suspended (incl. JINR – Int. Org.)

^{**}cash contribution

Status: May 14, 2024

NUSTAR Early and First Science



Full operation
Limited operation
(some components used)

NUSTAR Score Card (ES / FS) – March 2024



	NUSTAR sub-system	TDR	Cost [k€ 2005]	Funding	Construction	Date completion	Test/Commissioning
Early and First Science (ES / FS)							
ES / FS	Cave infrastr.		1,633			12/2026	
	HISPEC/DESPEC		11,111			11/2025	
	MATS		535			09/2025	
	LaSpec		67			06/2021	
	R3B		18,447			07/2026	
	ILIMA		424			06/2025	
	Super-FRS EC		568			12/2025	
		90.9% <i>value weighted</i>	32,784	94.5% <i>secured</i>	61.4% <i>value weighted</i>		56.7% <i>value weighted</i>
Change since report 2023 I	- 0.8%	+ 287.2	+ 2.0%	- 4.3%		+ 5.9%	

- HISPEC/DESPEC and R³B test status updated
- R³B: re-procurement of former Russian in-kind and TRT (former Si tracker) lead to a decrease of the construction status (**activities restarted**)
- secured funding for re-procurement and GLAD MSS

Construction Common Fund – staging steps



PSP-Code	Description	data from approved TDR	cost (2005) kEUR	FAIR staging step
1.2.1.2.4	Detectors and slit system for FLF6	yes	135.7	ES
1.2.1.2.5	Beam line to MATS-LaSpec hall	yes	154.0	FS++LEB
1.2.1.7	Beam line to MATS RFQ	yes	198.4	FS++LEB
1.2.1.8	Media supplies	yes	110.5	ES
1.2.1.9	Safety	yes	25.7	ES
1.2.1.10	IT infrastructure	yes	16.1	ES
1.2.1.11	Mechanics and alignment	yes	28.4	ES
1.2.2.1.8	Scintillators at FLF2 in vacuum	yes	28.6	ES
1.2.2.3.6	Adaption of platforms for ES/FS operation	yes	10.0	ES
1.2.2.5	Safety	yes	59.2	ES
1.2.5.1.1.3.3	GLAD feedbox	yes	135.7	ES
1.2.5.1.1.3.4	GLAD warm piping	yes	6.8	ES
1.2.5.1.1.3.5	GLAD infrastructure		193.3	ES
1.2.5.1.3.4	Vacuum systems (4th share)	yes	114.9	ES
1.2.5.1.5.1	Mechanics and alignment	yes	112.0	ES
1.2.6.4.4	ToF detectors - infrastructure CR	yes	63.8	MSVC
1.2.6.6.4	DAQ - common infrastructure	yes	24.4	MSVC
1.2.10.1.1.2	DAQ infrastructure (share 2)	yes	74.3	ES
1.2.10.1.2.1.1	Pendulum valves (share 1)	yes	66.0	ES
1.2.10.1.2.3	60L dewar	yes	24.8	ES
1.2.10.1.2.4	LN2 piping	yes	5.0	ES
		Total	1587.6	

Expenditures per year (present estimate)

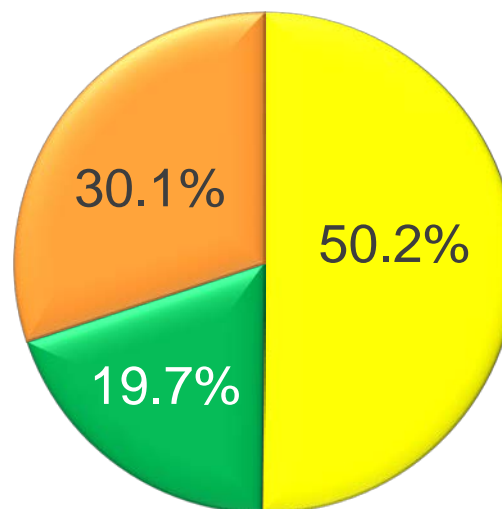


PSP-Code	Description	2023	2024	2025	2026	2027	2028	2029	2030	total
1.2.1.2.4	Detectors and slit system for FLF6				239.7					239.7
1.2.1.2.5	Beam line to MATS-LaSpec hall							294.0		294.0
1.2.1.7	Beam line to MATS RFQ							378.8		378.8
1.2.1.8	Media supplies			190.2						190.2
1.2.1.9	Safety			44.2						44.2
1.2.1.10	IT infrastructure			27.7						27.7
1.2.1.11	Mechanics and alignment			48.9						48.9
1.2.2.1.8	Scintillators at FLF2 in vacuum			49.2						49.2
1.2.2.3.6	Adaption of platforms for ES/FS operation			17.2						17.2
1.2.2.5	Safety			101.9						101.9
1.2.5.1.1.3.3	GLAD feedbox		227.6							227.6
1.2.5.1.1.3.4	GLAD warm piping		11.4							11.4
1.2.5.1.1.3.5	GLAD infrastructure	316.0								316.0
1.2.5.1.3.4	Vacuum systems (4th share)			197.8						197.8
1.2.5.1.5.1	Mechanics and alignment			192.8						192.8
1.2.6.4.4	ToF detectors - infrastructure CR								125.0	125.0
1.2.6.6.4	DAQ - common infrastructure								47.8	47.8
1.2.10.1.1.2	DAQ infrastructure (share 2)				131.3					131.3
1.2.10.1.2.1.1	Pendulum valves (share 1)				116.6					116.6
1.2.10.1.2.3	60L dewar			42.7						42.7
1.2.10.1.2.4	LN2 piping			8.6						8.6
		316.0	239.0	921.2	487.6	0.0	0.0	672.8	172.8	2809.4

- United Kingdom - **update**

- **STFC paid additional 50 kEUR as part of UK contribution to CF**
 - **Full MSV contribution**

Country	expected [EUR]	share	paid [EUR]
Germany	907555	32.3%	300000
United Kingdom	253582	9.0%	254000
Spain	220216	7.8%	
Italy	206869	7.4%	
France	160157	5.7%	
USA	113444	4.0%	
Japan	106771	3.8%	
China	100098	3.6%	
India	93425	3.3%	
Poland	93425	3.3%	
Finland	86752	3.1%	
Sweden	86752	3.1%	
Romania	73405	2.6%	
others	306967	10.9%	
	2809418	100.0%	554000

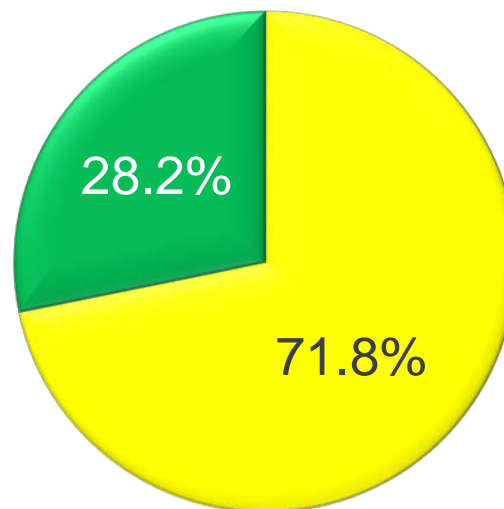


- required for ES/FS
- available
- beyond ES/FS

Present status of CF contributions (ES/FS)

- 70% of total share to be collected
 - **STFC has already paid full MSV contribution**
 - **GSI paid most of the ES/FS part**

Country	expected [EUR]	share	paid [EUR]
Germany	635289	32.3%	300000
United Kingdom	177507	9.0%	254000
Spain	154151	7.8%	
Italy	144808	7.4%	
France	112110	5.7%	
USA	79411	4.0%	
Japan	74740	3.8%	
China	70069	3.6%	
India	65398	3.3%	
Poland	65398	3.3%	
Finland	60726	3.1%	
Sweden	60726	3.1%	
Romania	51384	2.6%	
others	214877	10.9%	
	1966594	100.0%	554000



■ required for ES/FS
 ■ available

- NUSTAR funding “Early and First Science”
 - 95.4% of Day-one configuration related to Early and First Science **secured**
 - **Additional funding** via BMBF-VF (**CSC, CALIFA**)
 - gSPEC core system **secured**
 - 2.9% (infrastructure) expected via **Construction Common Fund**
 - 1.7% still to come from partner/member institutes (Eol / tba)
 - Additional funding **beyond Day-one** configuration
 - **Two more** NeuLAND double planes funded (BMBF-VF)
 - **Additional** GADAST modules for Super-FRS EC / EXPERT
- NUSTAR Construction Common Fund
 - Priority for Early and First Science items (**70% of total CF**)
 - First payments received
 - UK and GSI (**about 28% of ES/FS items covered**)

Additional material

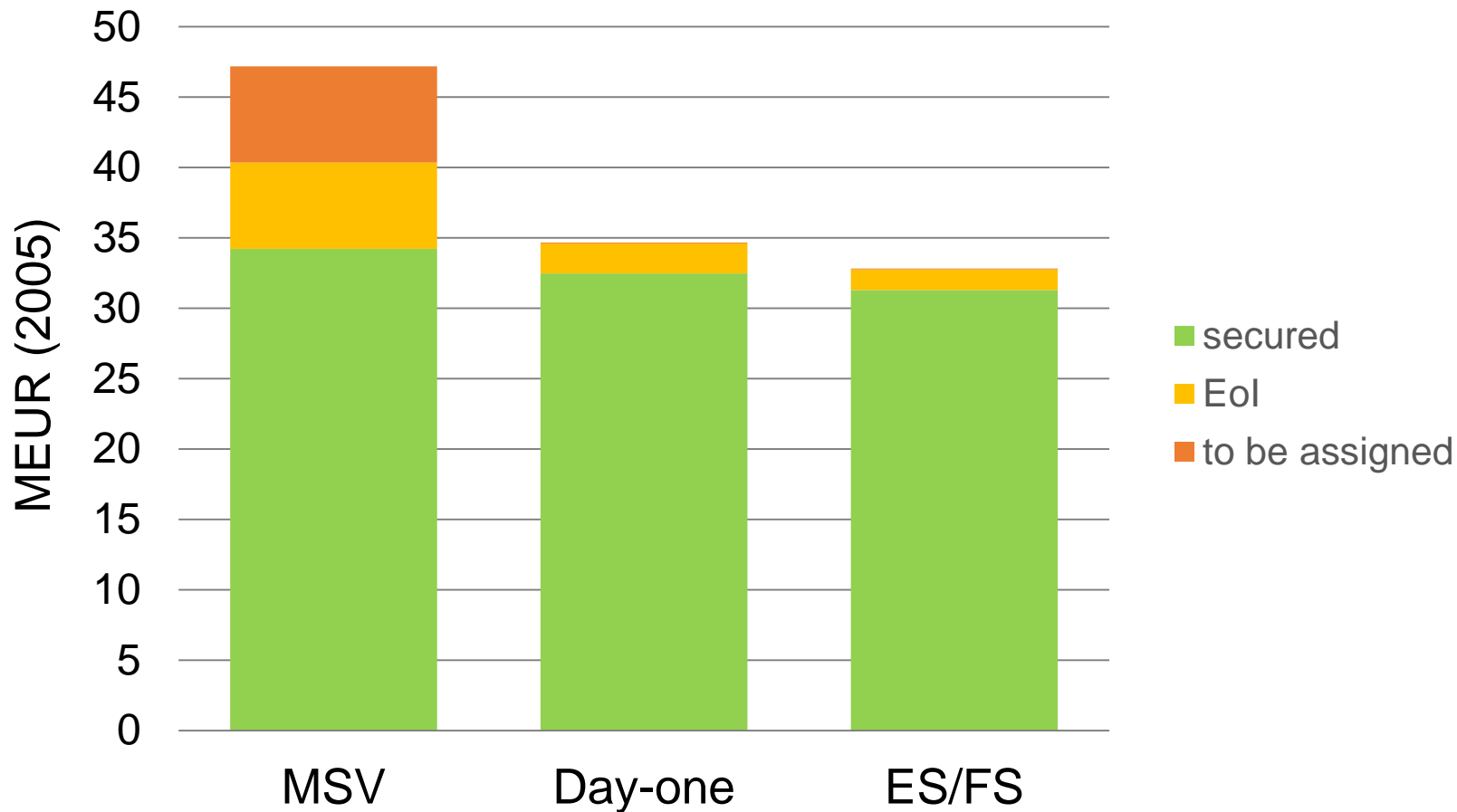
NUSTAR (overview – all staging steps)



		NUSTAR sub-system	TDR	Cost [k€ 2005]	Funding	Construction	Date completion	Test/ Commissioning	
Day-one configuration	Early and First Science (ES / FS)								
	ES / FS	Cave infrastr.		1,633				12/2026	
		HISPEC/DESPEC		11,111				11/2025	
		MATS		535				09/2025	
		LaSpec		67				06/2021	
		R3B		18,447				07/2026	
		ILIMA		424				06/2025	
		Super-FRS EC		568				12/2025	
		90.9% <i>value weighted</i>	32,784	94.5% <i>secured</i>	61.4% <i>value weighted</i>		56.7% <i>value weighted</i>		
	First Science ++ LEB (FS++LEB)								
	FS++LEB	Cave infrastr.		352				12/2028	
		MATS		638				09/2026	
		LaSpec		186				05/2026	
			100.0% <i>value weighted</i>	1,176	66.6% <i>secured</i>	39.3% <i>value weighted</i>		30.2% <i>value weighted</i>	
	Modularized Start Version Completion (MSVC)								
	MSVC	ILIMA		678				07/2030	
			100.0% <i>value weighted</i>	678	58.5% <i>secured</i>	0.0% <i>value weighted</i>		0.0% <i>value weighted</i>	
			NUSTAR	TDR	Cost [k€ 2005]	Funding	Construction	Date completion	Test/ Commissioning
			91.4% <i>value weighted</i>	34,638	92.8% <i>secured</i>	59.4% <i>value weighted</i>		54.7% <i>value weighted</i>	
		Change since report 2023 I	- 0.8%	+ 287.2	+ 1.9%	- 4.1%		+ 5.6%	

March 2023

Comparison MSV / Day-one / ES/FS



Status of TDRs (MSV)



27	approved
1	submitted
2	expected
7	beyond "Day one"

Sub-system	TDR #	name	status
NUSTAR	2_01	LEB infrastructure	approved
LEB infrastructure	2_02	Cryogenic Stopping cell	approved
HISPEC/DESPEC	2_04	HISPEC/DESPEC infrastructure	approved
NUSTAR	2_05	NUSTAR DAQ	approved
HISPEC/DESPEC	2_07	Active target (India)	expected
HISPEC/DESPEC	2_08	HYDE	expected
HISPEC/DESPEC	2_09	LYCCA	approved
HISPEC/DESPEC	2_10	Plunger	approved
HISPEC/DESPEC	2_11	AIDA	approved
HISPEC/DESPEC	2_12	DEGAS	approved
HISPEC/DESPEC	2_13	FATIMA	approved
HISPEC/DESPEC	2_14	BELEN	approved
HISPEC/DESPEC	2_15	MONSTER	approved
HISPEC/DESPEC	2_16	NEDA	approved
HISPEC/DESPEC	2_17	DTAS	approved
HISPEC/DESPEC	2_18	gSPEC	expected
NUSTAR	2_19	MATS/LaSpec	approved
R3B	2_21	GLAD	approved
R3B	2_22	R3B tracking	approved
R3B	2_24	CALIFA barrel	approved
R3B	2_25	CALIFA fwd endcap	approved
R3B	2_26	TRT (former Si tracker)	submitted
R3B	2_27	NeuLAND	approved
R3B	2_28	R3B vacuum	approved
R3B	2_29	R3B infrastructure	approved
R3B	2_30	R3B spectrometer	expected
R3B	2_32	ACTAF	approved
ILIMA	2_33	ILIMA Schottky	approved
ILIMA	2_34	ILIMA TOF detectors	approved
ILIMA	2_35	ILIMA Heavy ion detector	approved
HISPEC/DESPEC	2_37	Slowed down beam setup	expected
Super-FRS Experiment	2_38	EXPERT	approved
Super-FRS Experiment	2_39	Super-FRS Exp infrastructure	approved
Super-FRS Experiment	2_40	Liquid hydrogen target	expected
Super-FRS Experiment	2_41	(Ice target and tensor force)	expected
Super-FRS Experiment	2_42	(future WASA)	expected
R3B	2_43	HYDRA	expected

11/2025

11/2025

06/2024*

07/2024

11/2025

07/2024

06/2024*

07/2025

07/2024

*funding available/secured

NUSTAR MSV: Funding distribution (by country)

	Common infrastr.	HISPEC/ DESPEC	MATS	LaSpec	R ³ B	ILIMA	Super-FRS EC	total	secured	Eol
Australia		50.0						50.0		50.0
Belgium				153.8				153.8	82.6	71.2
Bulgaria		16.3						16.3	16.3	
Canada						80.0	124.3	204.3	138.2	66.1
Czech Republic							320.0	320.0	320.0	
FAIR	668.8	97.8			1407.1	88.2	170.1	2432.0	1037.7	1394.3
Finland		387.9	215.2	106.4			36.3	745.8	745.8	
France		262.0			2935.0			3197.0	3197.0	
Germany	1243.4	1699.3	1675.9	146.2	8425.0	740.0	11.8	13941.6	13358.5	583.1
Hungary					12.1			12.1	12.1	
India		2514.0	40.0					2554.0	2092.2	461.8
Israel	58.5						13.6	72.1	58.5	13.6
Italy					130.0			130.0	130.0	
Japan						193.2	196.8	390.0	196.8	193.2
Netherlands					104.0			104.0	104.0	
Poland		500.0						500.0	500.0	
Romania		1822.5						1822.5	1822.5	
Russia					744.7		1156.0	1900.7	898.8	1001.9
Slovenia		21.4			75.0			96.4	96.4	
Spain		2332.2	317.1		864.9			3514.2	2139.2	1375.0
Sweden		1027.9			1800.0			2827.9	2817.9	10.0
Turkey		88.5						88.5		88.5
United Kingdom		2813.1		87.1	2389.1			5289.3	4619.3	670.0
to be assigned	1100.0	600.8	684.5	133.8	3420	690.2	214.8	6844.1		
total	3070.7	14233.7	2932.7	627.3	22306.9	1791.6	2243.7	47206.6	34383.8	5978.7

NUSTAR MSV: Funding distribution (by country)

	total	secured FAIR	secured external	Eol
Australia	50.0			50.0
Belgium	153.8		82.6	71.2
Bulgaria	16.3		16.3	
Canada	204.3		138.2	66.1
Czech Republic	320.0		320.0	
FAIR	2432.0	844.4	193.3	1394.3
Finland	745.8	709.5	36.3	
France	3197.0	2530.0	667.0	
Germany	13941.6	6020.0	7338.5	583.1
Hungary	12.1		12.1	
India	2554.0	2010.0	82.2	461.8
Israel	72.1		58.5	13.6
Italy	130.0		130.0	
Japan	390.0		196.8	193.2
Netherlands	104.0		104.0	
Poland	500.0	500.0		
Romania	1822.5	1822.5		
Russia	1900.7	700.6	198.2	1001.9
Slovenia	96.4		96.4	
Spain	3514.2		2139.2	1375.0
Sweden	2827.9	1575.0	1242.9	10.0
Turkey	88.5			88.5
United Kingdom	5289.3	4619.3		670.0
to be assigned	6844.1			
total	47206.6	21331.3	13052.5	5978.7

FAIR: cash contribution for re-procurement former Russian in-kind and **NUSTAR Common Fund** (construction)

Russia: Russian institutes suspended, all activities on hold

May 14, 2024

Experiment	Prices, K Euro				
	2005 prices			2024 prices	
	Secured*	Eol	to be assigned	Eol	to be assigned
Common infrastr.	1301.9	668.8	1100.0	1121.8	1845.1
HISPEC/DESPEC	11373.1	2259.8	600.8	3790.6	1007.8
MATS	1596.3	651.9	684.5	1093.5	1148.2
LaSpec	335.2	158.3	133.8	265.5	224.4
R ³ B	18180.1	706.8	3420.0	1185.6	5736.7
ILIMA	820.0	281.4	690.2	472.0	1157.7
Super-FRS EC	777.2	1251.7	214.8	2099.6	360.3
Total	34383.8	5978.7	6844.1	10028.6	11480.2

(*including expected from FAIR budget)

Status: May 14, 2024

NUSTAR experiment funding (Day one)



Experiment	Prices, K Euro				
	2005 prices			2024 prices	
	Secured*	Eol	to be assigned	Eol	to be assigned
Common infrastr.	1301.9	668.8	0.0	1121.8	0.0
HISPEC/DESPEC	10890.9	262.4	0.0	440.1	0.0
MATS	1132.9	40.0	0.0	67.1	0.0
LaSpec	252.6	0.0	0.0	0.0	0.0
R ³ B	17682.9	706.8	56.9	1185.6	95.4
ILIMA	820.0	281.4	0.0	472.0	0.0
Super-FRS EC	398.1	170.1	0.0	285.3	0.0
Total	32479.3	2129.5	56.9	3571.9	95.4

(*including expected from FAIR budget)

Status: May 14, 2024

NUSTAR experiment funding (ES/FS, Day-one) FAIR

Experiment	Prices, K Euro				
	2005 prices			2024 prices	
	Secured*	Eol	to be assigned	Eol	to be assigned
Common infrastr.	1301.9	316.4	0.0	530.7	0.0
HISPEC/DESPEC	10890.9	262.4	0.0	440.1	0.0
MATS	534.7	0.0	0.0	0.0	0.0
LaSpec	67.0	0.0	0.0	0.0	0.0
R ³ B	17682.9	706.8	56.9	1185.6	95.4
ILIMA	423.5	0.0	0.0	0.0	0.0
Super-FRS EC	398.1	170.1	0.0	285.3	0.0
Total	31299.0	1455.7	56.9	2441.7	95.4

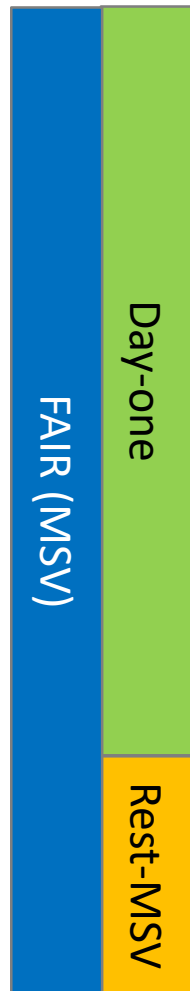
(*including expected from FAIR budget)

Status: May 14, 2024

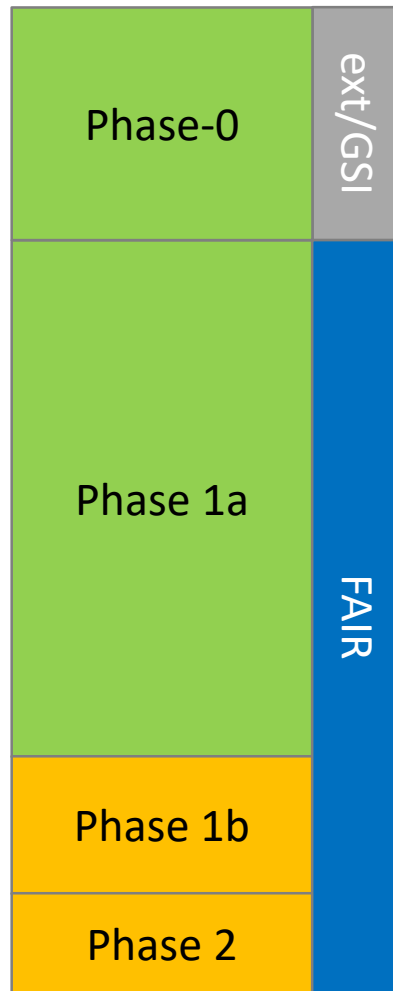
Funding vs. installation/operation at FAIR



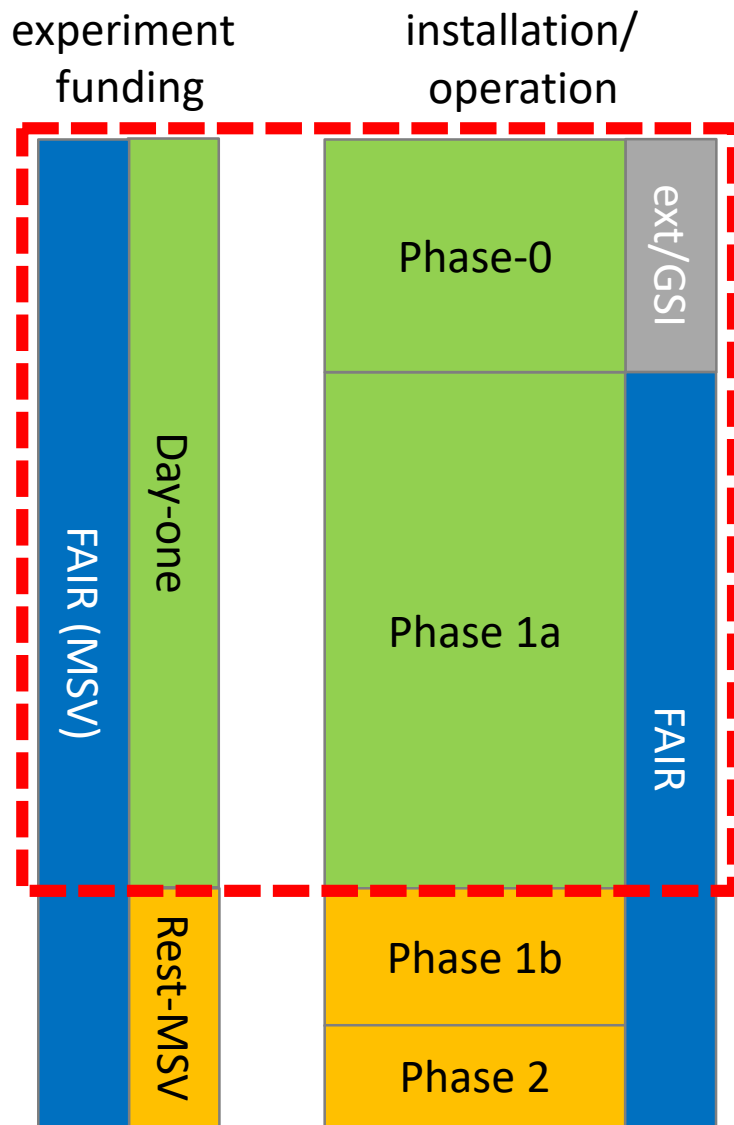
experiment
funding



installation/
operation



Funding vs. installation/operation at FAIR



“Day-one” score card

	NUSTAR sub-system	TDR	Cost [k€ 2005]	Funding	Construction	Date completion	Test/Commissioning
Day 1	Cave infrastr.		1,985			12/2028	
	HISPEC/DESPEC		11,111			11/2025	
	MATS		1,173			09/2026	
	LaSpec		253			05/2026	
	R3B		18,159			03/2026	
	ILIMA		1,101			07/2030	
	Super-FRS EC		568			12/2025	
		92.2% <i>value weighted</i>	34,351	90.9% <i>secured</i>	63.5% <i>value weighted</i>		49.0% <i>value weighted</i>
Change since report 2022 II	- 0.7%	+ 526	- 2.7%	- 0.2%		+ 3.2%	

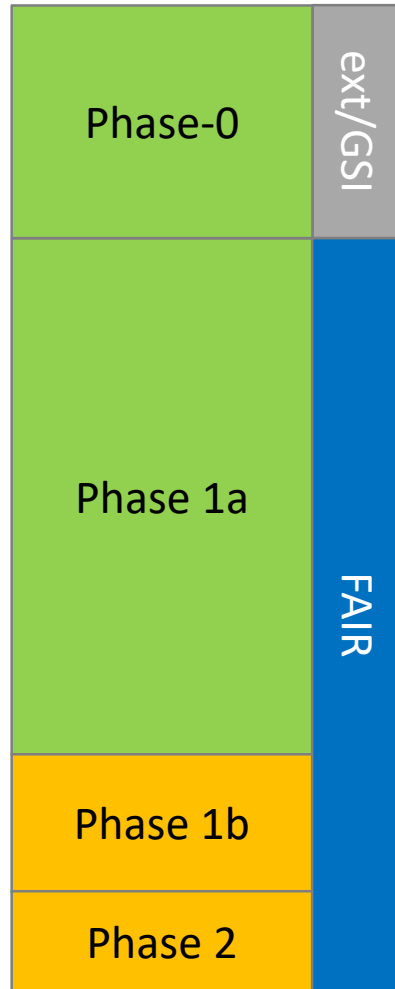
Funding vs. installation/operation at FAIR



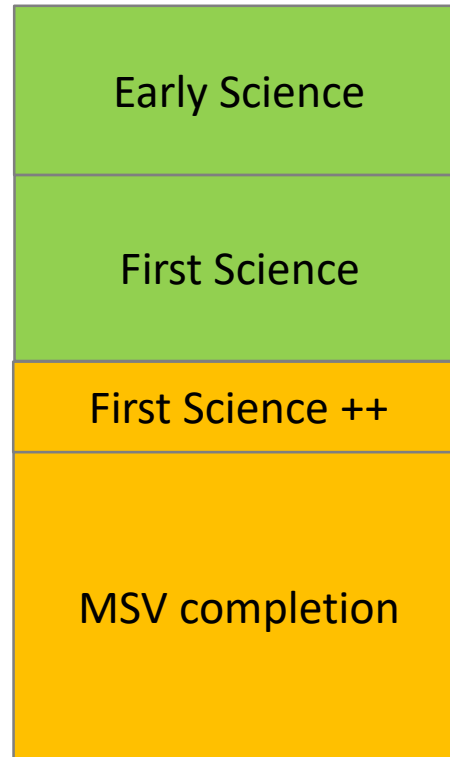
experiment
funding



installation/
operation



new staging steps
for FAIR



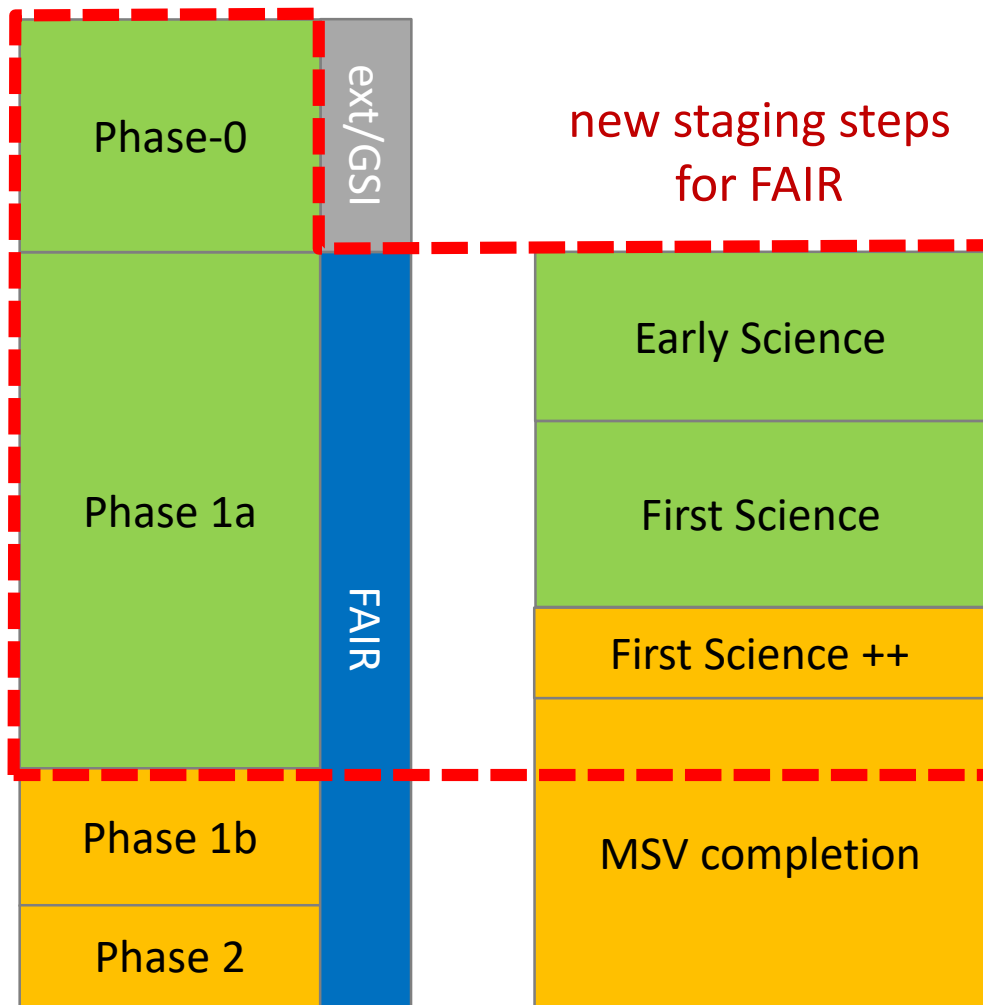
Funding vs. installation/operation at FAIR



experiment
funding



installation/
operation



new
score card

	NUSTAR sub-system	TDR	Cost (xk 2005)	Funding	Construction	Date completion	Test/Commissioning
Day-one configuration	Early and First Science (ES / FS)						
	Cave infrastr.		1,633			12/2026	
	HISPEC/DESPEC		11,111			11/2025	
	MATS		535			09/2025	
	LaSpec		67			06/2021	
	R3B		18,159			03/2026	
	ILIMA		424			06/2025	
	Super-FRS EC		568			12/2025	
		91.8% value weighted	32,497	92.5% secured	65.7% value weighted		50.7% value weighted
		First Science ++ LEB (FS++LEB)					
Cave infrastr.		352			12/2028		
MATS		638			09/2026		
LaSpec		186			05/2026		
	100.0% value weighted	1,176	66.6% secured	39.3% value weighted		30.2% value weighted	
MSVC	Modularized Start Version Completion (MSVC)						
	ILIMA		678	58.5% secured	0.0% value weighted	07/2030	0.0% value weighted
		100.0% value weighted	678				
	NUSTAR						
	TDR	Cost (xk 2005)	Funding	Construction	Date completion	Test/Commissioning	
		34,351	90.9% secured	63.5% value weighted		49.0% value weighted	
	92.2% value weighted						
Change since report 2022 II	-0.7%	+526	-2.7%	-0.2%		+3.2%	