

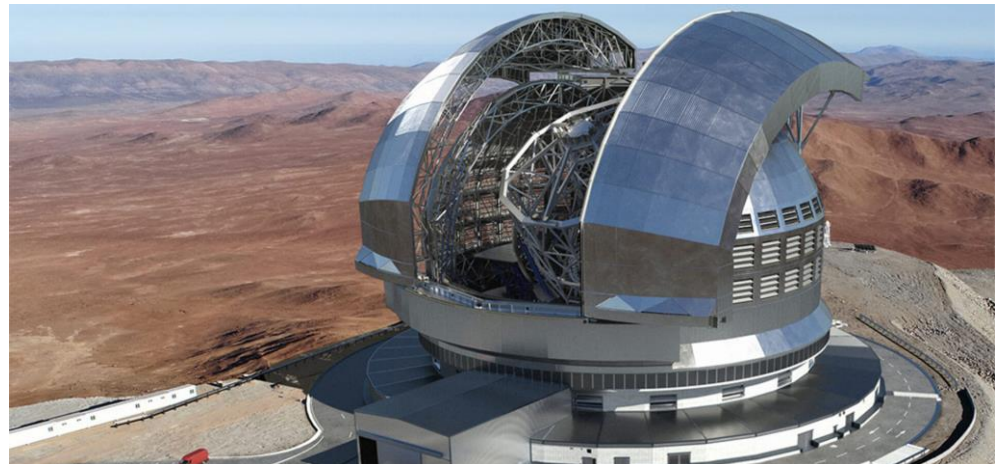
“HIRES” – Management Phase B

Paolo Di Marcantonio on behalf of PM team

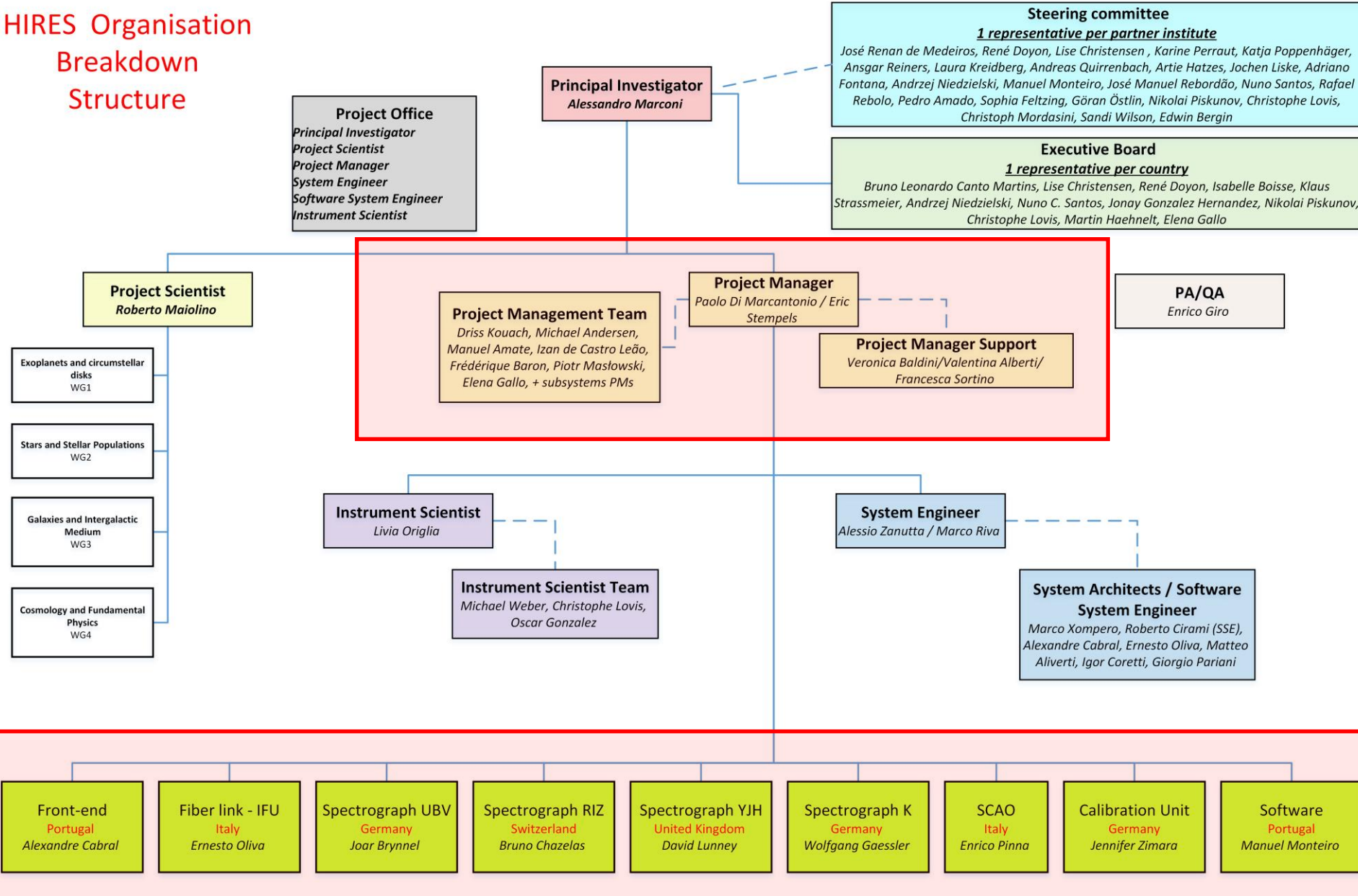
layout blank on purpose
logo, template for presentations, templates for documents – to be defined

Project challenges

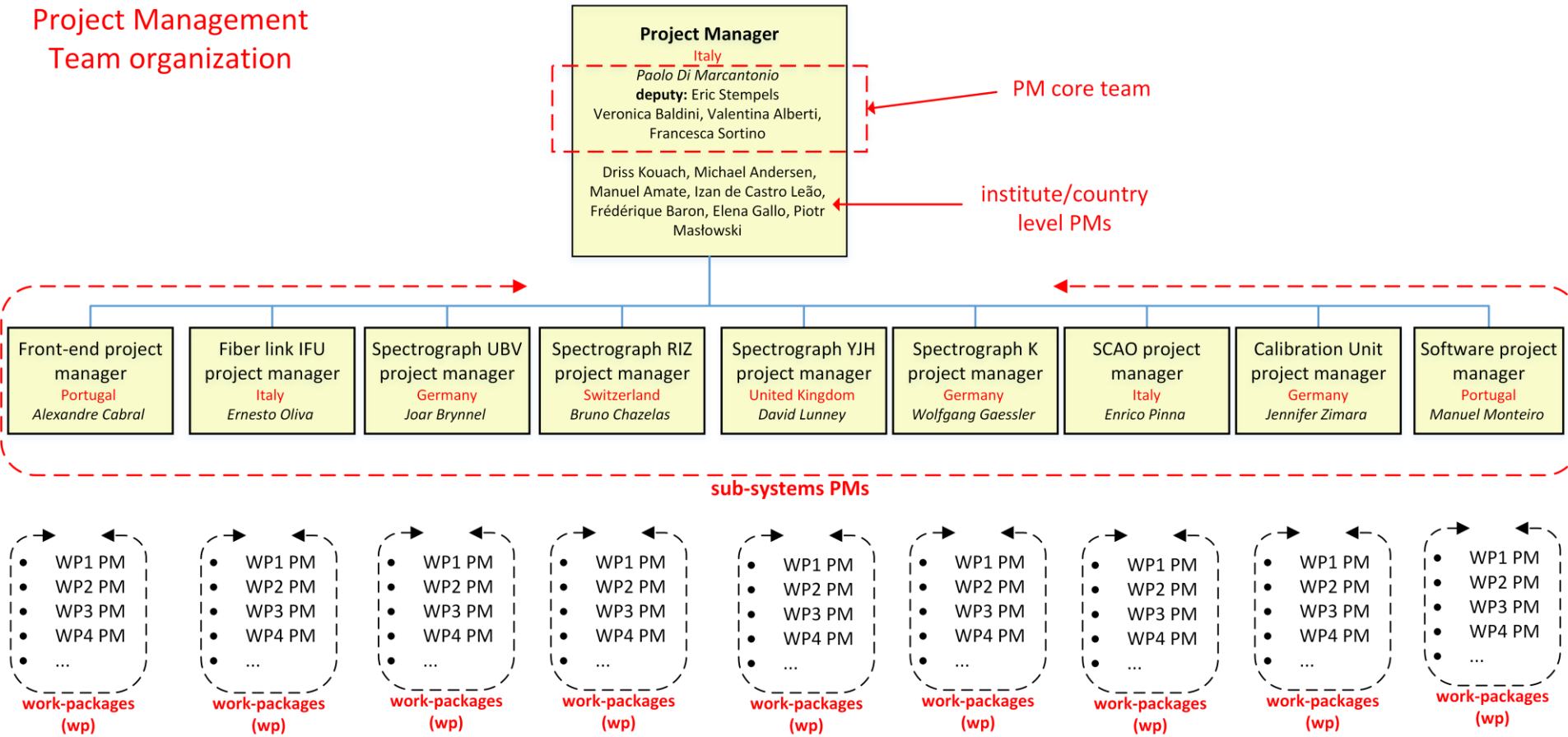
- Very large consortium (registered participants > 100! final project participants > 200)
 - ✓ it includes the majority of experts in high resolution spectroscopy in Europe, working at the forefront of scientific research
 - ✓ it benefits from existing, consolidated collaborations (ESPRESSO, CRIRES+, MOONS, 4MOST etc.)
- Multi-spectrograph project
 - ✓ it benefits from modularity
- Large resource effort (costs and FTEs) on the consortium member side
- Long project timeline

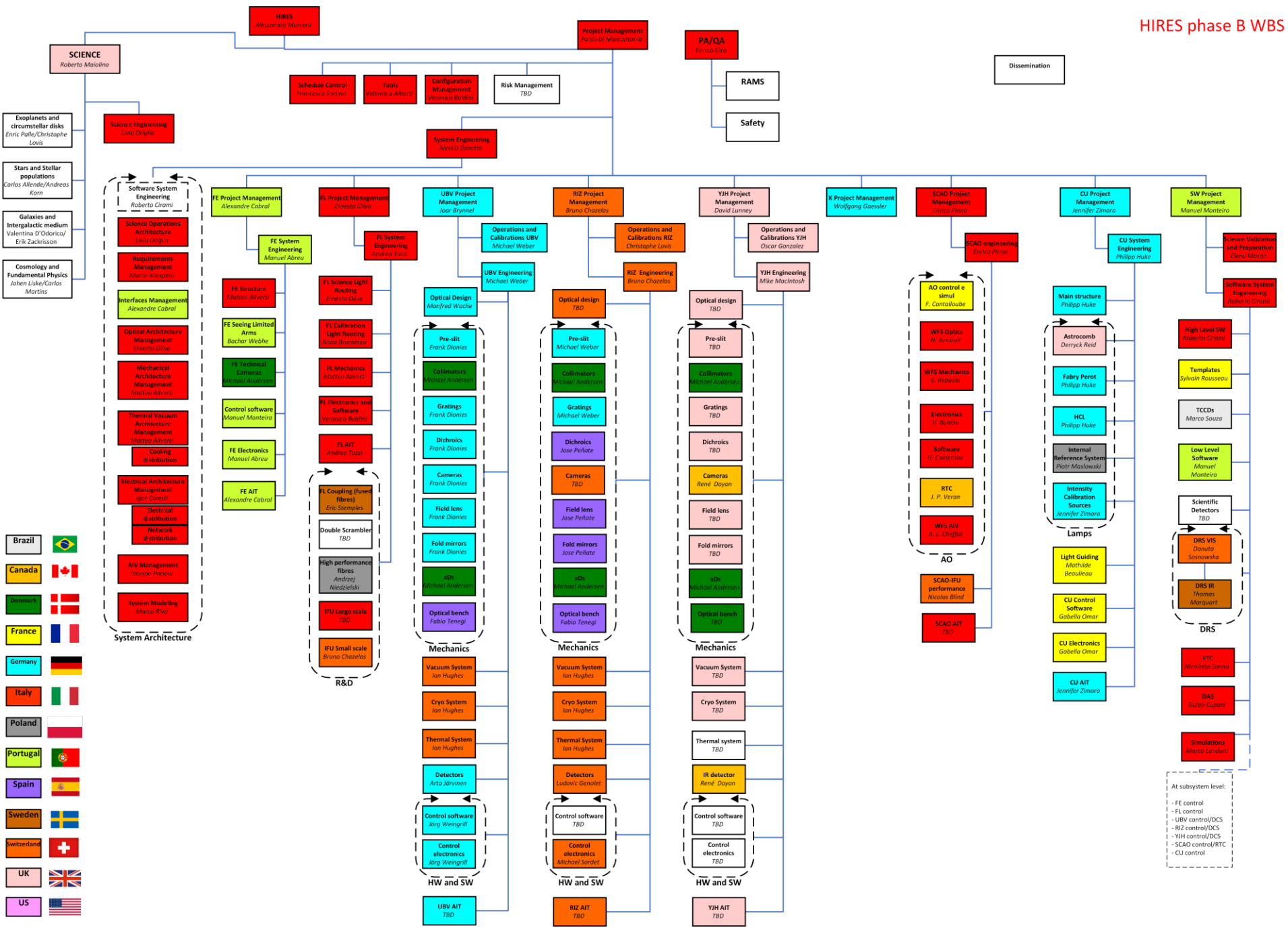


HIRES Organisation Breakdown Structure



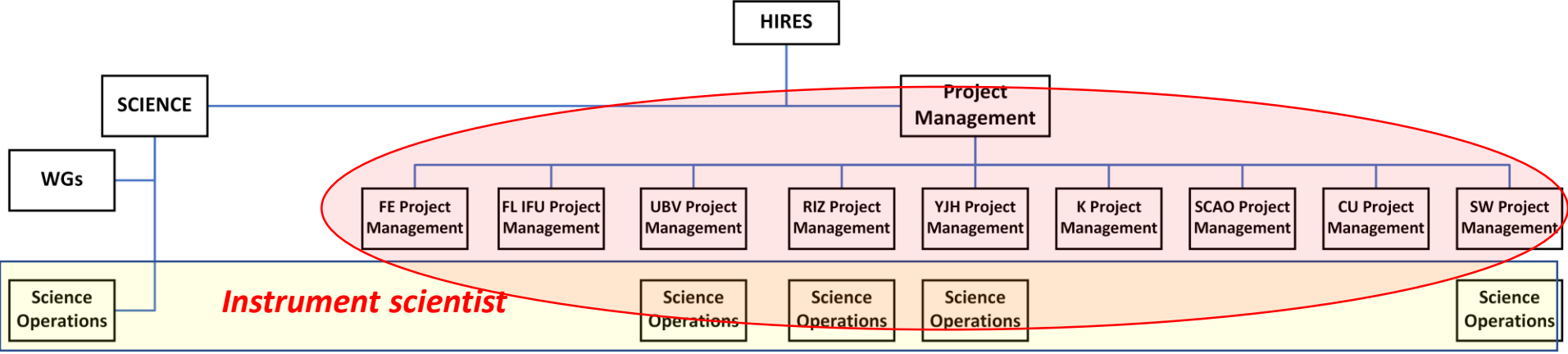
Project Management Team organization





- Brazil
- Canada
- Denmark
- France
- Germany
- Italy
- Poland
- Portugal
- Spain
- Sweden
- Switzerland
- UK
- US

- At subsystem level:
- FE control
 - FL control
 - UBV control/DCS
 - RIZ control/DCS
 - YJH control/DCS
 - SCAO control/RTC
 - CU control



system engineer

FE System Engineering	FL IFU System Engineering	UBV System Engineering	RIZ System Engineering	YJH System Engineering	K System Engineering	SCAO System Engineering	CU System Engineering	SW System Engineering
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optical architect

Optics	Routing	Optics	Optics	Optics		Optics		Control
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mechanical architect

Mechanics	Mechanics	Mechanics	Mechanics	Mechanics		Mechanics		DRS
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thermal-vacuum architect

		Vacuum	Vacuum	Vacuum				DAS
		Cryo	Cryo	Cryo				
		Thermal	Thermal	Thermal				
		Detectors	Detectors	IR Detectors				
		Control	Control	Control		Control	Control	

electronics architect

Electronics	Electronics	Electronics	Electronics	Electronics		Electronics	Electronics	
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AIT architect

AIT	AIT	AIT	AIT	AIT		AIT	AIT	
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software system engineer

*“Core” Project management team + PA/QA
(excl. sub-systems or national PMs)*



Paolo Di Marcantonio (PM)

Eric Stempels (deputy PM)



Enrico Giro
(PA/QA)



Veronica Baldini
Configuration Management



Valentina Alberti
Tools



Francesca Sortino
Schedule Control

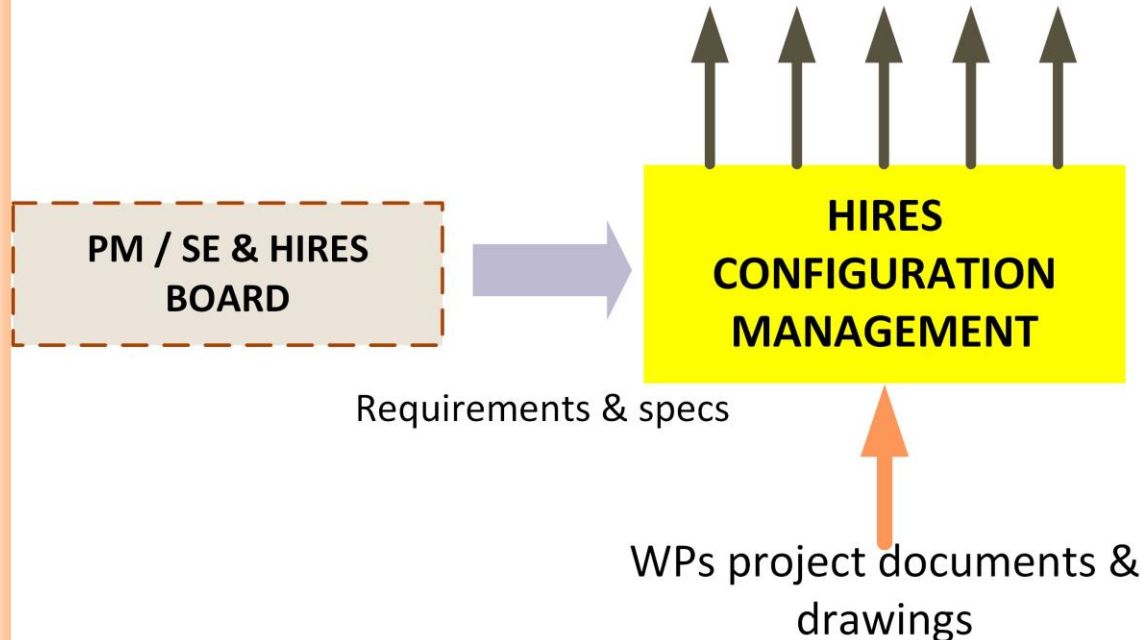


Configuration Management



Veronica Baldini
Telecom. Engineer
INAF - OATs

- **Configuration item tree management** (HW, SW, docs and drwg numb. assignment)
- **Control and check project documentation** (homogeneity, numbering, etc.)
- **Docs template preparation**
- **Management of the central archive**
(<https://ia2-owncloud.oats.inaf.it>)



Tools to support the project management



Fast and effective collaboration. Easy knowledge and info sharing and browsing.

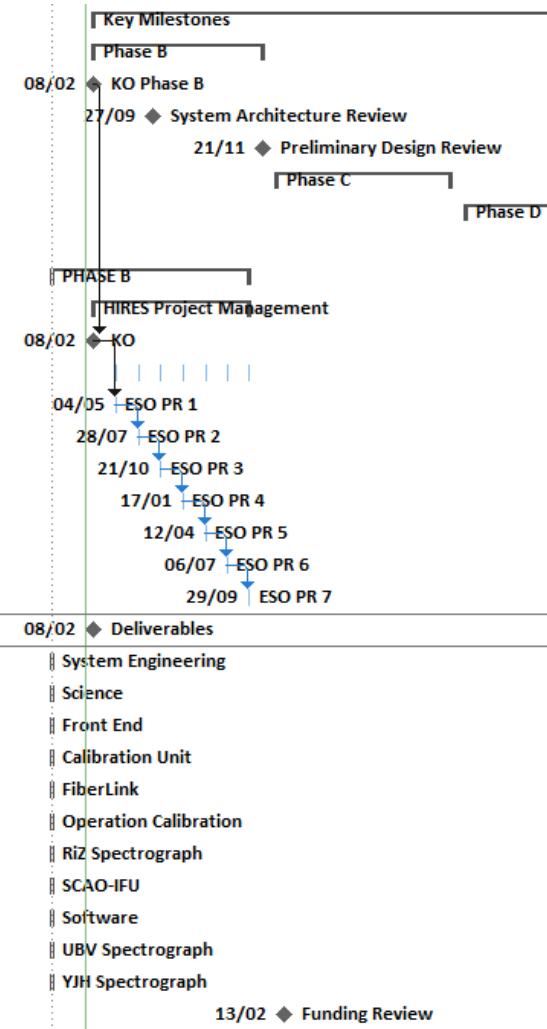
Communication	zoom/skype/teams/meet/...
Document sharing	ownCloud
Document collaboration (real-time)	Teams / Google tools
Document management (versioning of docs to be shared with ESO)	To be decided
Generic project management and ticketing systems	Jira
Content Management System	Confluence
Document signature	DocuSign (TBD)

Project timeline			
Project phases	Milestone (in SoW)	Duration	Name
Phase B	KM.1	T0 + 2 weeks	Kick-off (KO)
	KM.2	T0 + 6 months	System architecture completion (SAR)
	KM.3	T0 + 24 months	Preliminary design completion (PDR)
		T0 + 26 months	Funding review (FR)
Phase C	KM.4	T0 + 48 months	Final design completion (FDR)
Phase D	KM.5	T0 + 80 months	Integration readiness completion (IRR)
	KM.6	T0 + 88 months	Test readiness completion (TRR)
	KM.7	T0 + 108 months	Preliminary acceptance Europe completion (PAE)
Phase E	KM.8	T0 + 120 months	Provisional acceptance Chile completion (PAC)
Phase F	KM.9	PAC + 2 years	Final acceptance completion (FAC)

Phase B – detailed plan

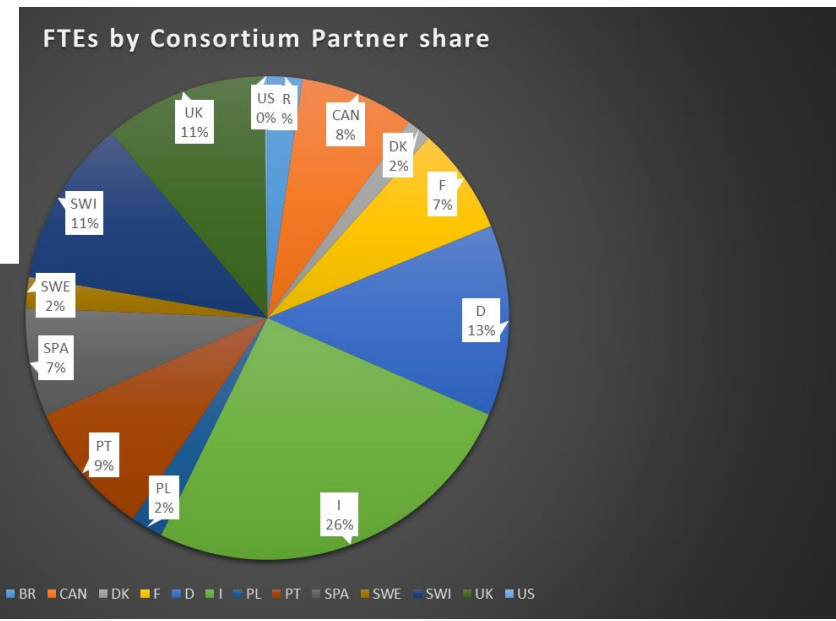


Key Milestones	2375 days	Tue 08/02/22	Tue 18/03/31	
Phase B	465 days	Tue 08/02/22	Tue 21/11/23	
KO Phase B	0 days	Tue 08/02/22	Tue 08/02/22	4
System Architecture Review	0 days	Tue 27/09/22	Tue 27/09/22	5FS+150 days
Preliminary Design Review	0 days	Tue 21/11/23	Tue 21/11/23	5FS+450 days
Phase C	482 days	Mon 15/01/24	Tue 18/11/25	
Phase D	1094 days	Thu 15/01/26	Tue 26/03/30	
PAC	0 days	Tue 18/03/31	Tue 18/03/31	19;84
PHASE B	543 days?	Wed 01/09/21	Fri 29/09/23	
HIRES Project Management	428 days	Tue 08/02/22	Fri 29/09/23	
KO	0 days	Tue 08/02/22	Tue 08/02/22	8
ESO PR	368 days	Wed 04/05/22	Fri 29/09/23	
ESO PR 1	1 day	Wed 04/05/22	Wed 04/05/22	23FS+60 days
ESO PR 2	1 day	Thu 28/07/22	Thu 28/07/22	25FS+60 days
ESO PR 3	2 days	Fri 21/10/22	Mon 24/10/22	26FS+60 days
ESO PR 4	1 day	Tue 17/01/23	Tue 17/01/23	27FS+60 days
ESO PR 5	1 day	Wed 12/04/23	Wed 12/04/23	28FS+60 days
ESO PR 6	1 day	Thu 06/07/23	Thu 06/07/23	29FS+60 days
ESO PR 7	1 day	Fri 29/09/23	Fri 29/09/23	30FS+60 days
Deliverables	0 days	Tue 08/02/22	Tue 08/02/22	
System Engineering	1 day?	Wed 01/09/21	Wed 01/09/21	
Science	1 day?	Wed 01/09/21	Wed 01/09/21	
Front End	1 day?	Wed 01/09/21	Wed 01/09/21	
Calibration Unit	1 day?	Wed 01/09/21	Wed 01/09/21	
FiberLink	1 day?	Wed 01/09/21	Wed 01/09/21	
Operation Calibration	1 day?	Wed 01/09/21	Wed 01/09/21	
RiZ Spectrograph	1 day?	Wed 01/09/21	Wed 01/09/21	
SCAO-IFU	1 day?	Wed 01/09/21	Wed 01/09/21	
Software	1 day?	Wed 01/09/21	Wed 01/09/21	
UBV Spectrograph	1 day?	Wed 01/09/21	Wed 01/09/21	
YJH Spectrograph	1 day?	Wed 01/09/21	Wed 01/09/21	
Funding Review	0 days	Tue 13/02/24	Tue 13/02/24	13



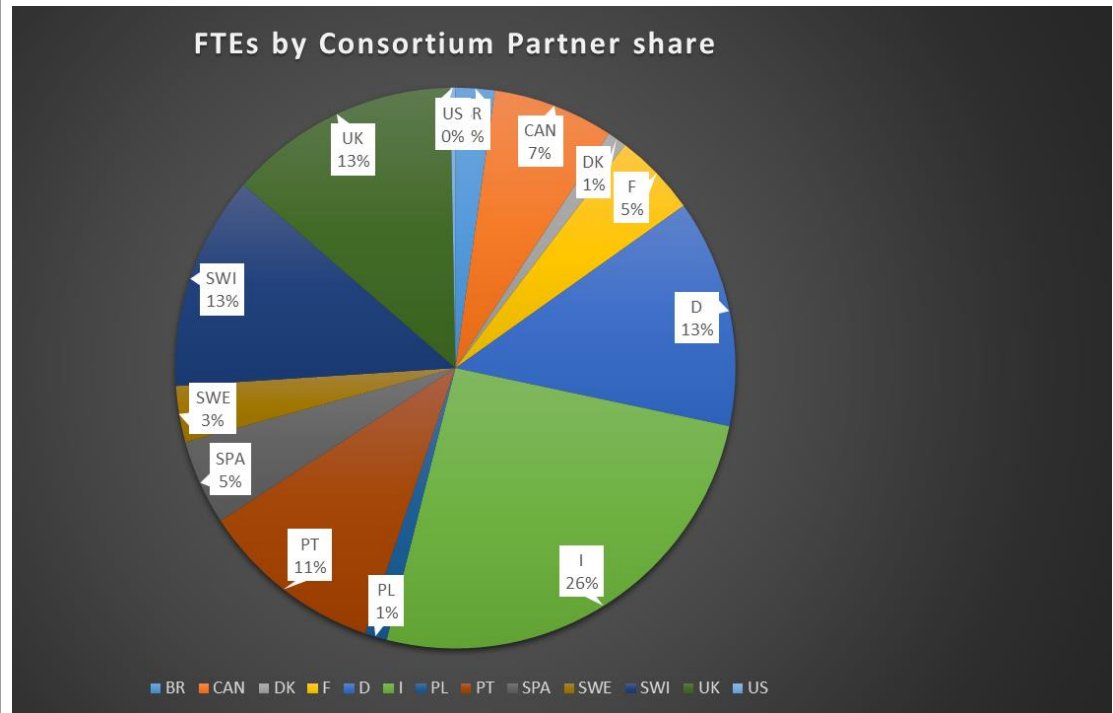
Phase B to E – resources and shares per country

Human resources			
Subsystem	[FTEs in pers.-years]	Contributors	Remarks
Science	25	All	led by UK; management only
Project management	20	All sub-system leaders	led by I
System engineering	30	All sub-system leaders	led by I
Front-end	65	PT/I/DK	led by PT
SCAO/IFU	75	I/CAN/F/CH	led by I
Fiber Link	50	I/SWE/PL	led by I
UBV Spectrograph	60	D/SPA/DK/CH	led by D
RIZ Spectrograph	60	CH/SPA/DK/D	led by CH
YJH Spectrograph	55	UK/CAN/DK	led by UK (w/o thermal encl.)
Detectors: IR	30	CAN	led by CAN (camera included)
Calibrations	70	D/F/CH/PL/UK	led by D Add +25 with extra CU on Nasmyth
Software: control, science	70	I/PT/F/D/BR/CAN/ SPA/CH/SWE	Science and control (common parts)
Electronics		I/PT/BR/SWI	incl. above
AIV		All sub-system	incl. above
Pack & Shipping		All sub-system	incl. above
Total:	610		

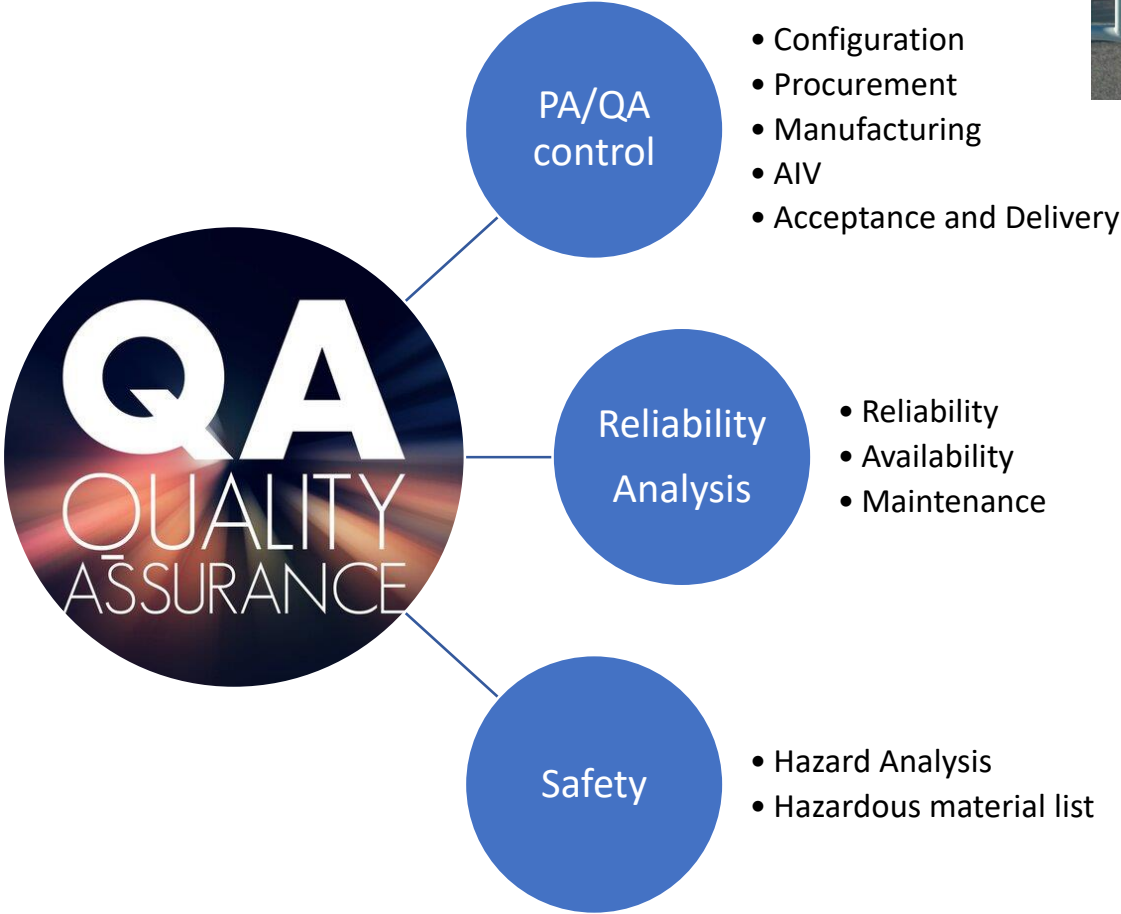


Phase B – resources and shares per country

Partner	FTEs
1. Brazil (Univ. Rio Grande do Norte)	2,3
2. Canada (Montreal University)	7,1
3. Denmark (Instrument Center Danish Astrophysics (Niels Bohr Inst., Aarhus Univ., DTU Lyngby))	1,15
4. France (LAGRANGE, LAM, IRAP/OMP, IPAG, LUPM)	4,9
5. Germany (AIP Potsdam, IAG Göttingen, MPIA Heidelberg, ZAH Heidelberg, TLS Tautenburg, HS Hamburg)	17,4
6. Italy (INAF)	26,1
7. Poland (Univ. Torun)	1,3
8. Portugal (CAUP Porto, FCiências.ID Lisbon, Inst. Astrophysics & Space Science)	10,8
9. Spain (IAC Tenerife, CSIC: IAA, Astrobiology)	5
10. Sweden (Lunds University, Stockholms University, Uppsala University)	3,3
11. Switzerland (Geneve University, Bern University)	12,6
12. UK (STFC: UKATC, Heriot-Watt Univ., Cambridge Univ.)	13,6
13. US (Univ. Michigan)	0,3
Total	105.9



PA/QA Processes



Authority flow-down

The *Principal Investigator* supervises the scientific and technological activity and is responsible for representing the instrument to the astronomical community, assisted by the *Project Scientist* that leads the science team.

The *Steering Committee (1 representative per Partner)* is the ultimate decision-making body of the Consortium and allows a proper connection with the funding agencies ensuring that adequate level of funding, manpower resources and infrastructures necessary to the HIREs Project are obtained.

The *Executive Board (1 representative per Country)* provides regular advice to the PI and the SC on all technical and scientific matters, in order to ensure the fulfilment of the scientific objectives of the Project.

The *Steering Committee* does not take scientific or technical decisions but operates by approving documents proposed by the PI in collaboration with the Executive Board.

Decision	Responsible
Instrument responsible	PI assisted by EB and SC
Science Program	PS assisted by the ST, by the EB and PI
Observation Strategy	PS assisted by the ST and by the IS
Project schedule, budget, resource allocation	PM assisted by PM team, assisted by SE and SSE, approved by SC
Reviews organization	PM, ESO representative for ESO reviews/milestones
Documentation, PA/QA	PM assisted by SE and SSE, Configuration manager, PA/QA
Operations, calibrations, commissioning	IS, PS
Technical matters	SE, SSE, System Architects, assisted by WPM
Interfaces internal to the instrument	SE assisted by Interface Manager, SSE
Requirements management	SE assisted by Requirements Manager
Interfaces between the instrument and ESO	SE, SSE, System Architects and ESO representative

Project monitoring

- PM at disposal on short notice (via chatting tools, emails, videoconference)
- PM recurrent meetings with fortnight cadence
- a web form will be available (in confluence) to insert a short report of activities; at the meeting only system critical aspects will be analyzed
- contact between subsystems is encouraged
- at the end of each month some quantitative reporting will be requested at the level of subsystems (also used for final share computation); there is anyway a necessity to couple the expected and performed work

Official repository: <https://owncloud.ia2.inaf.it/index.php/login>

- *HIRES_public (all consortium members)*
 - ✓ TechSpec and SoW (*HIRES_public\PHASE_B\DATA_PACK*)
 - ✓ ESO AD and RD documents (*HIRES_public\PHASE_B\DATA_PACK*)
 - ✓ Project Plan in Microsoft Project Professional 2019

Plenary meetings:

- *internal **consortium kick-off** meeting (hopefully in hybrid form): March 2022*
- ***ESO kick-off** meeting: approx. 1 month after the entry into force of the agreement (**restricted**)*
- ***All-hands** recurrent meetings (virtual): before ESO progress reports*
- ***ESO Progress report** : approx. every three months (**restricted**)*
- ***SAR/ PDR preparatory f2f, PDR: to be defined***

Specific WPs meetings:

- *PM, SE, Science, PO, technical to be defined by sub-systems*

HIRES Deliverables (to ESO) for kick-off (T0 + 1 month)

DRD	Description	Kick-Off	SAR
DD01	Configurated Item Data List CIDL (DRD150)	1	2
DD02	Executive Summary	1	2

Document Classification: ESO Internal [Confidential for N]

ESO
ELT

HIRES Construction Statement

(detailed list see SoW, Table 5)

DRD	Description	Kick-Off	SAR
DD03	Project Management Plan (incl. PA and Configuration Plan)	1	2
DD04	Project Schedule (DRD013)	1	2
DD05	Design, Development and Verification Plan	1	2
DD06	Compliance Matrix (DRD550)	1 ⁶	2
DD07	Risk Register, mitigation plan, status of the mitigating actions	1	2
DD08	System interface Control Document and Drawings		1
DD09	System Design, Analysis and Performance Report (incl. Technical Budgets DRD70)		1

HIRES Phase B work

