EIC-UK Project Finance Planning

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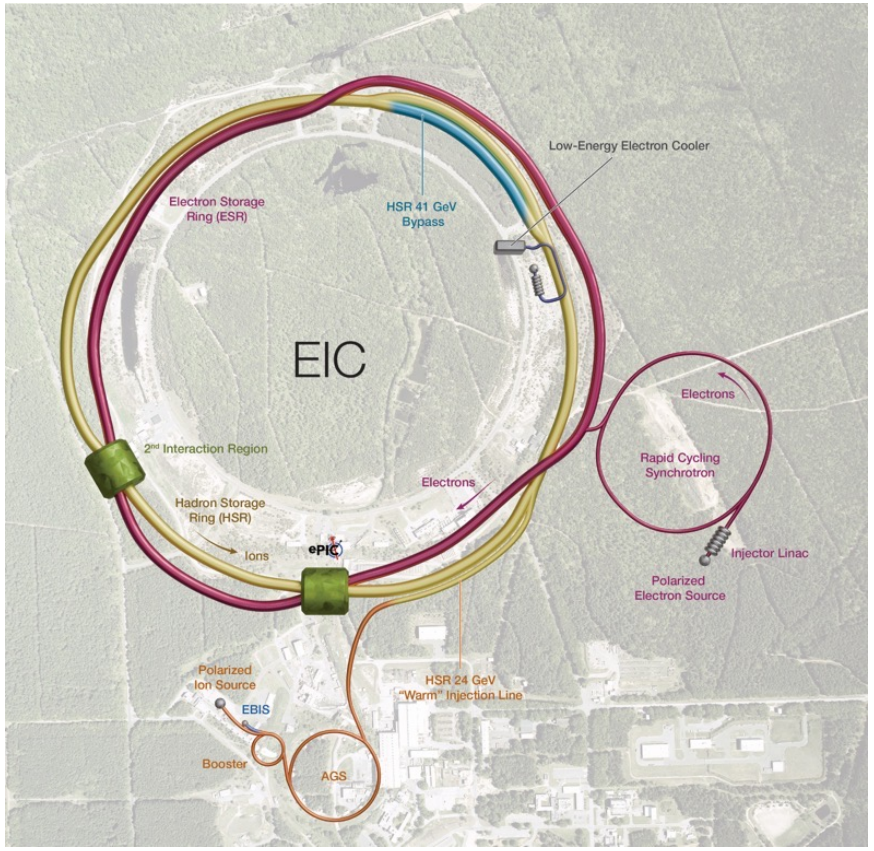
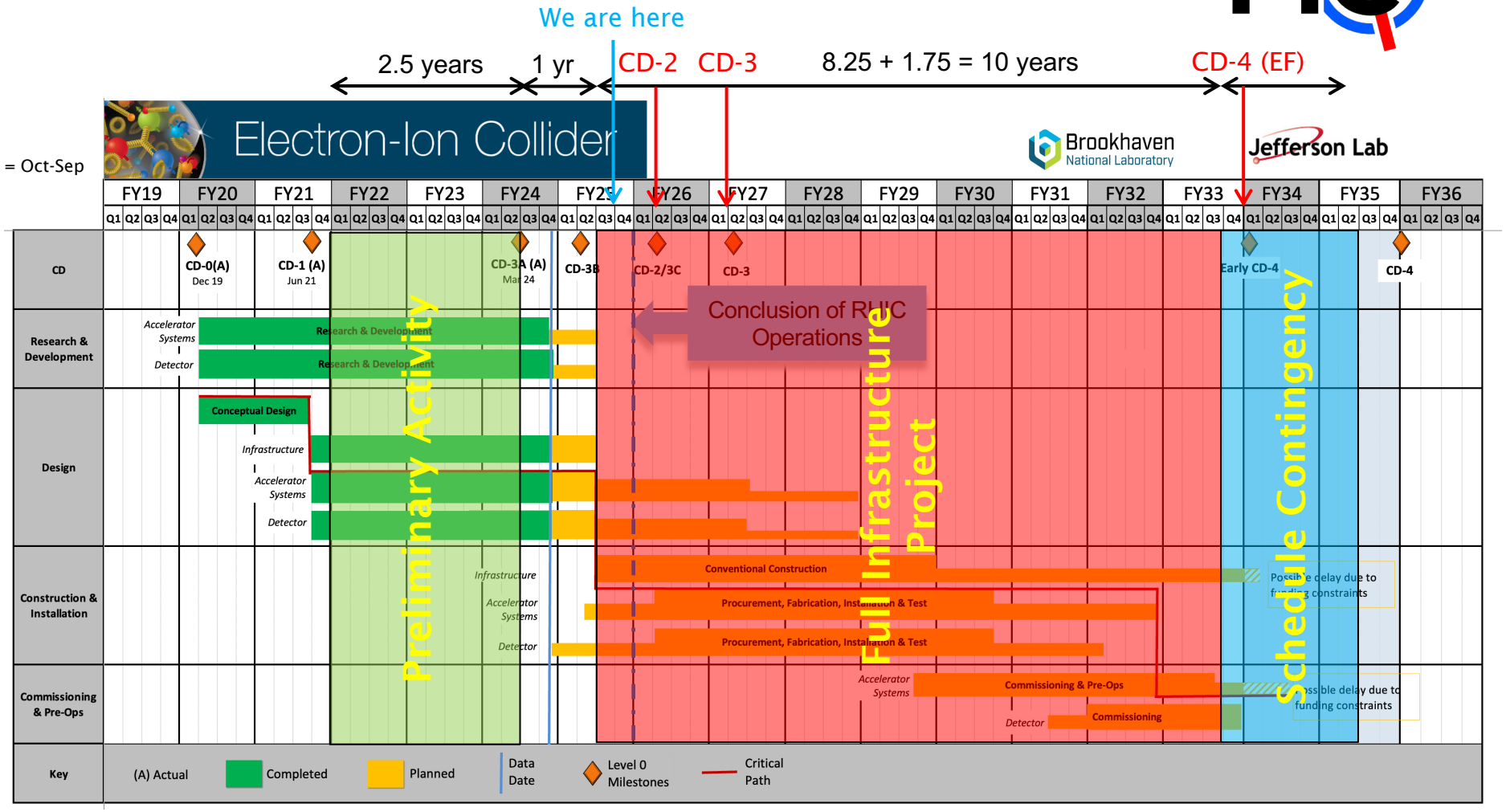


Daresbury Laboratory
Rutherford Appleton Laboratory

UK Project Funding – Status

- UKRI Full Infrastructure Project
  - Still waiting to find out if funding is available; no estimate on when this be known
  - If yes, UKRI is still expecting to award £2.8m this financial year
  - In readiness, STFC have asked us to prepare a TFS application for 3 years and 7 months
    - Start date: 1st of September 2025; End date: 31st of March 2029
  - Award will be via individual grants to each institute (direct transfer to the labs)
    - Each university will need to prepare its own TFS application!
  - Achieve £2.8m in this financial year by frontloading equipment/silicon
  - Costing has been updated to use current STFC lab staff costs
  - Indexation has been added to non-staff costs (excluding equipment and exceptions)
- Implications for WP1
  - Need to plan carefully the non-staff spend profile and where funds are held to retain flexibility
  - This is particularly true for the national labs where budget must be spent in year
  - STFC is seeking a policy change with respect to the labs but won't go to UKRI ExCo before April 2026

EIC Project Schedule (November 2024)



Critical Decision (CD) Milestones

CD-0 Approve Mission Need
CD-1 Approve Cost Range
CD-2 Approve Baseline Performance
CD-3 Approve Start Construction
CD-4 Approve Project Completion

Upcoming Project Milestones

PDR (pre-TDR) – Sep 2025
CD-2 – Jan 2026
TDR – Sep 2026
CD-3 – Jan 2027
CD-4(EF) – Oct 2033
CD-4 – Oct 2035
Difference between CD-4(EF) and CD-4 is US schedule contingency

(EF = Early Finish)

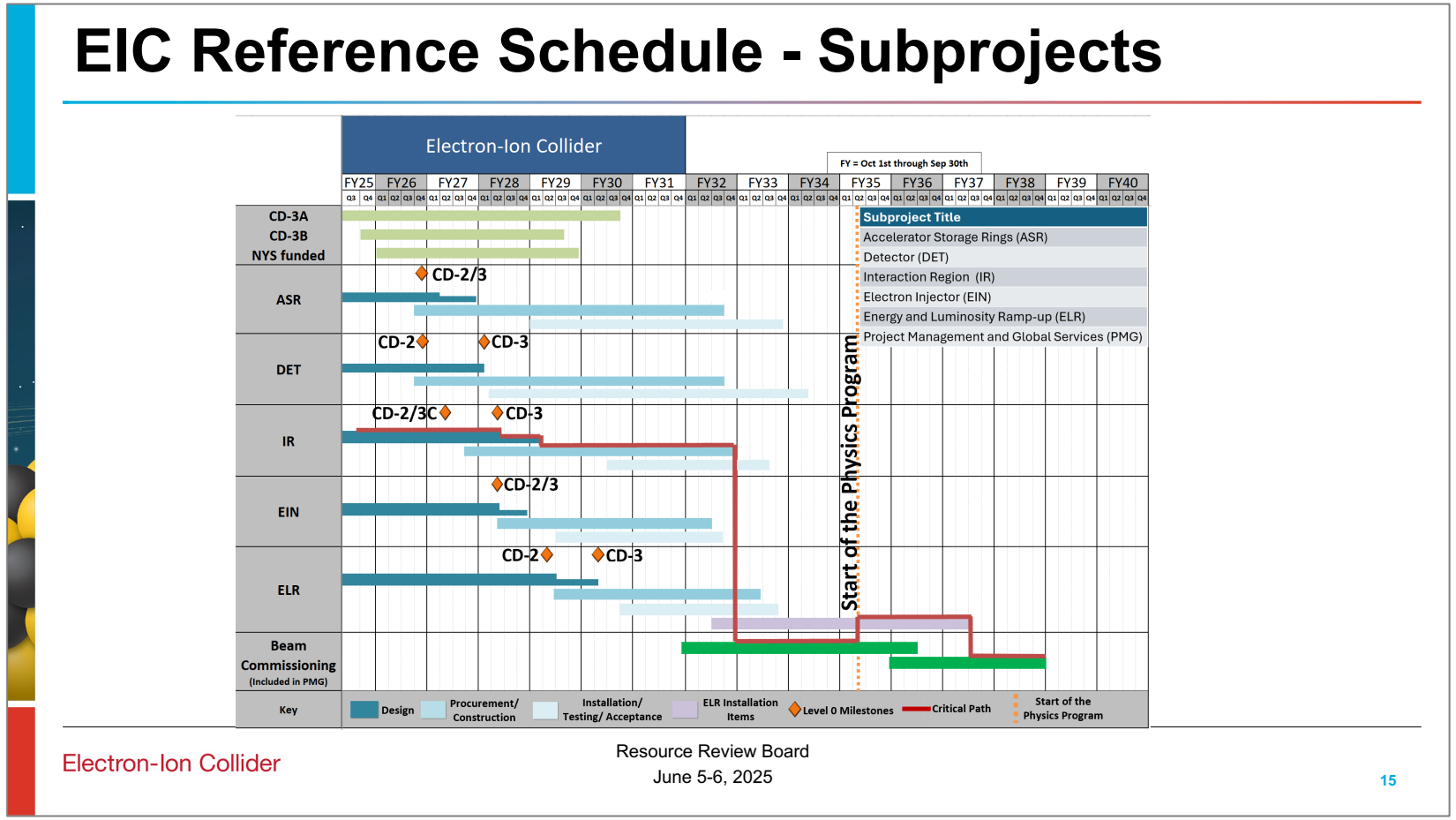
Phasing the delivery of the accelerator allows science programme to start at CD-4 (EF)

UK-EIC Detector R&D Project
UK-EIC Detector Construction Project

Latest (unofficial) EIC project schedule – CD dates still under discussion
Reflects uncertainty in level of FY25 funding and current plans to phase the delivery of the accelerator

EIC Project Schedule (June 2025)

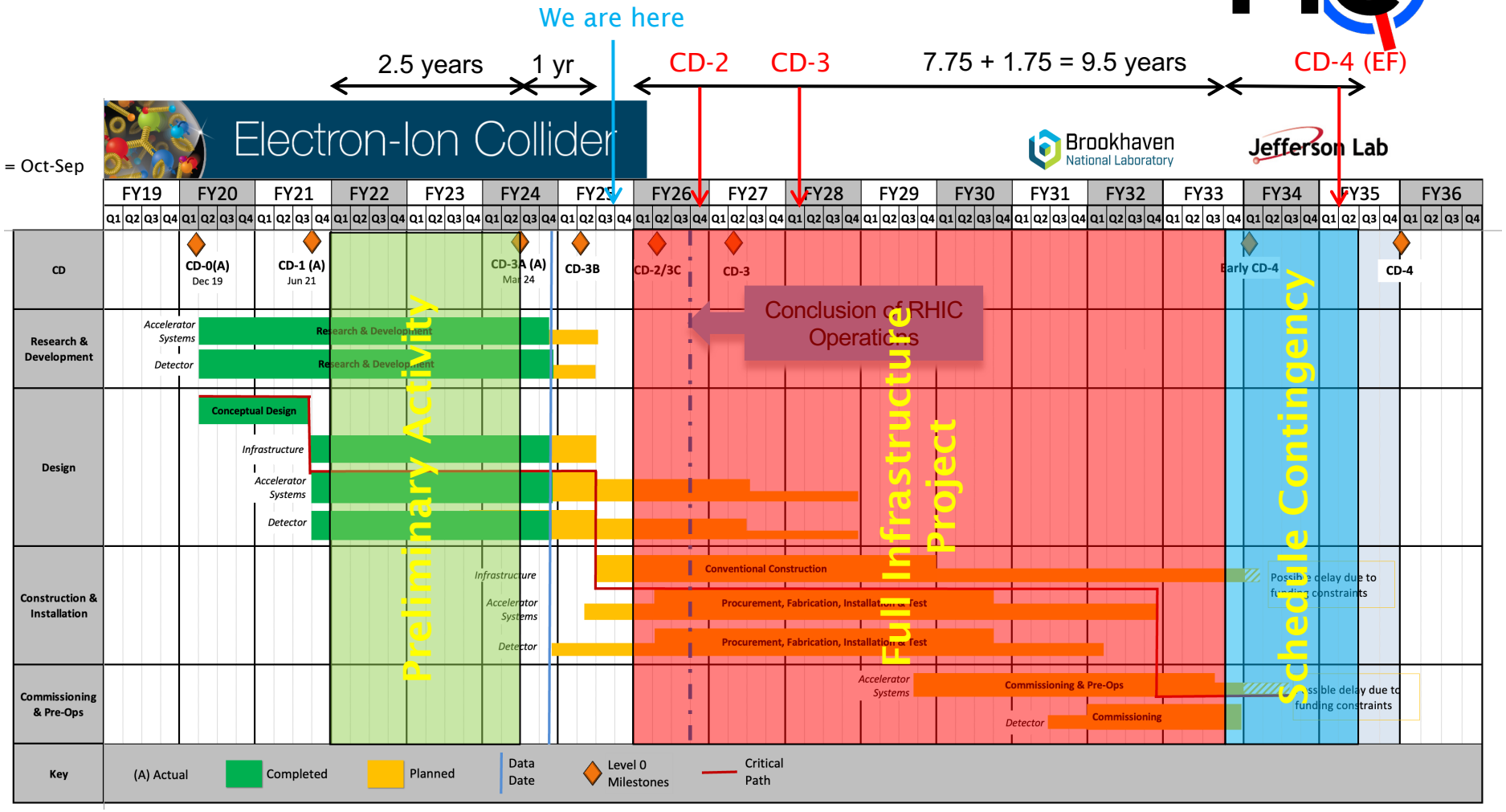
- Jim Yeck's presentation at the June RRB meeting



Expect Detector CD-2 by end of September 2026 and CD-3 by end of December 2027

Start of the Physics Programme coincides with CD-4 (EF) in January 2035

EIC Project Schedule (June 2025)



NOTE: US Financial Years (FY) = Oct-Sep

Critical Decision (CD) Milestones

CD-0 Approve Mission Need
CD-1 Approve Cost Range
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CD-3 Approve Start Construction
CD-4 Approve Project Completion

Upcoming Project Milestones

PDR (pre-TDR) – Sep 2025
CD-2 – Sep 2026 was Jan 2026
CD-3 – Dec 2027 was Jan 2027
CD-4(EF) – Jan 2035 was Oct 2033
CD-4 – Jan 2037 was Oct 2035
Difference between CD-4(EF) and CD-4 is US schedule contingency

(EF = Early Finish)

Phasing the delivery of the accelerator allows science programme to start at CD-4 (EF)

UK-EIC Detector R&D Project
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Reflects uncertainty in level of FY25 funding and current plans to phase the delivery of the accelerator

WP1 Schedule

- Version 4.0

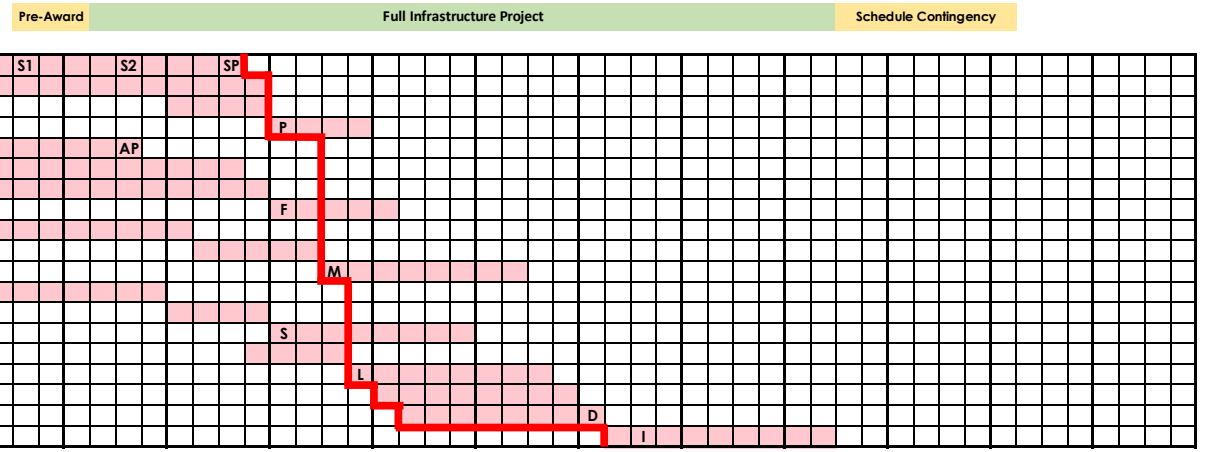
In the current (unofficial) schedule CD-2 and CD-3 are split
CD-2 is delayed by 9 months
CD-3 is delayed by 12 months
CD-4 (EF) and CD-4 also slip by 15 months
Barrel detectors installed: earliest June 2032 (my guess; confirm with Elke)

Gantt chart: EIC Full Infrastructure Project

Version: 4.0 - Delayed start to Full Project and new CD milestones (DET subproject)
Author: Peter Jones (p.g.jones@bham.ac.uk)

Starting date:	01/04/2025	Year	2025				2026				2027				2028				2029				2030				2031				2032				2033				2034				2035				2036			
Year:	2025	Q	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Quarter:	2	nQ	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
		CD milestone						2					3																													4e							4

ID	Task	Start Time	End Time	Duration Q
	WP1 - Silicon Tracker			
1	Sensor Design	01/04/2025	30/09/2027	10
2	Sensor Characterisation	01/04/2025	31/12/2027	11
3	Sensor Pre-Production Testing, site setup and qualification	01/01/2027	31/12/2027	4
4	Sensor Production Testing (QC/QA) incl. wafer probing	01/01/2028	31/12/2028	4
5	AncASIC Design	01/04/2025	01/08/2026	6
6	AncASIC Testing	01/04/2025	30/09/2027	10
7	Flexible Printed Circuits – Design and Testing	01/04/2025	31/12/2027	11
8	Flexible Printed Circuits – Production and Testing	01/01/2028	31/03/2029	5
9	Modules - Prototypes	01/04/2025	31/03/2027	8
10	Modules - Preproduction, site setup and qualification	01/04/2027	30/06/2028	5
11	Modules - Production	01/07/2028	30/06/2030	8
12	Staves - Prototypes	01/04/2025	31/12/2026	7
13	Staves - Preproduction, site setup and qualification	01/01/2027	31/12/2027	4
14	Staves - Production	01/01/2028	31/12/2029	8
15	Staves - Loading, site setup and qualification	01/10/2027	30/09/2028	4
16	Staves - Loading	01/10/2028	30/09/2030	8
17	Staves - Testing	01/01/2029	31/12/2030	8
18	Shipment to BNL	01/04/2029	31/03/2031	8
19	Installaton and Commissioning at BNL	01/04/2031	30/06/2033	9



Sensor (ITS3 schedule) has also slipped

Re-evaluate UK schedule considering ITS3 and US schedules; think about delaying new posts; lab spend profile

Holding (some) lab funds at a university would provide flexibility

Finance Planning – 1 of 3

- Overall Cost Profile

Cost summary	Cost £k (1 decimal place)										£m		
	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35			
Contingency ORIGINAL		412.3	1010.3	2131.5	2031.5	1484.0	1780.5	1559.2	2850.3	2724.5	16.0	37%	15,984,065
Total (UKRI IF contribution) ORIGINAL		4254.2	8138.2	12307.1	10853.8	6660.1	5892.1	4364.7	3625.2	2724.5	58.8		58,819,775
Unindexed Project Costs NEW PROFILE	2768.6	3701.8	6922.2	9870.3	7174.3	4519.1	3124.5	2001.9	440.4	0.0	40.5		40,523,150
Indexation NEW PROFILE	29.9	104.3	183.5	271.1	356.0	402.8	421.4	339.7	80.6	0.0	2.2		2,189,228
Contingency NEW PROFILE		412.3	1010.3	2131.5	2031.5	1484.0	1780.5	1559.2	2850.3	2724.5	16.0		
Total (UKRI IF contribution) NEW PROFILE	2798.5	4218.4	8116.0	12272.9	9561.9	6405.9	5326.4	3900.8	3371.3	2724.5	58.7	-0.123	58,696,442
Indexed Project Costs - WP4 NEW PROFILE	2798.5	3434.5	6287.0	7753.6							20.3	Phase 1	20,273,535
Call on Contingency		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		-
Headroom		35.8	22.2	34.2	1291.9	254.2	565.7	463.9	253.9	0.0			

Finance Planning – 2 of 3

- WP1 Cost Profile

WP1 - Silicon Tracker		Cost £k (1 decimal place)										£m
Breakdown	**Description**	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	
Staff Costs	University Staff	77.8	132.5	203.7	206.5	204.3	205.5	199.1	197.0	49.3		1.5
Staff Costs	University PDRAs	109.6	213.6	221.2	214.3	231.4	215.3	170.4	136.2	34.2		1.5
Staff Costs	University Engineers	62.6	110.1	191.5	210.2	189.8	167.8	163.7	112.0	28.0		1.2
Staff Costs	University Technicians	95.4	144.3	190.8	267.5	328.5	312.4	267.0	0.0	0.0		1.6
Staff Costs	STFC Physicists	103.4	148.6	257.8	334.9	350.7	300.2	203.6	110.1	28.4		1.8
Staff Costs	STFC Engineers	277.7	454.6	582.1	651.1	501.4	419.1	233.1	71.9	23.9		3.2
Staff Costs	STFC Technicians	48.7	117.3	196.0	411.3	462.8	420.2	164.4	17.1	0.0		1.8
Staff Costs	Estates	92.5	176.4	200.5	192.2	169.6	162.1	136.6	101.0	25.3		
Staff Costs	Infra Tech	23.9	26.6	27.5	23.5	11.5	11.4	6.6	4.4	1.1		
Staff Costs	Indirect	119.6	279.0	343.9	354.9	393.3	372.2	348.8	264.6	66.1		
Staff Costs	Indexation	14.4	54.3	105.2	151.2	199.1	229.1	241.7	176.5	50.3		
Staff Costs	**Total**	**1025.7**	**1857.2**	**2520.1**	**3017.6**	**3042.3**	**2815.3**	**2135.0**	**1191.0**	**306.6**	**0.0**	**17.9**
Non-Staff Costs	Equipment	960.0	0.0	1360.0	1930.0	950.0	0.0	0.0	0.0	0.0		5.2
Non-Staff Costs	Comsumables	230.0	250.0	260.0	440.0	520.0	440.0	260.0	0.0	0.0		2.4
Non-Staff Costs	Travel	35.0	80.0	100.0	130.0	130.0	120.0	100.0	237.5	62.5		1.0
Non-Staff Costs	Other	0.0	110.5	142.5	182.0	171.9	127.5	136.3	23.0	7.0		0.9
Non-Staff Costs	Indexation	6.6	17.7	29.2	61.0	87.6	88.7	80.4	51.4	15.4		0.4
Non-Staff Costs	**Total**	**1231.6**	**458.2**	**1891.7**	**2743.0**	**1859.5**	**776.2**	**576.7**	**311.9**	**84.9**	**0.0**	**9.9**
Total for WP1		**2257.2**	**2315.4**	**4411.7**	**5760.6**	**4901.8**	**3591.5**	**2711.7**	**1503.0**	**391.5**	**0.0**	**27.8**
Original profile for WP1			**2616.8**	**4515.5**	**5870.9**	**5730.1**	**3663.2**	**3106.9**	**1836.4**	**518.8**	**0.0**	**27.9**

Finance Planning – 3 of 3

- WP1 non-staff costs proposal

Is it okay to spread silicon spend into FY29/30?
If no, call on Working Allowance?

Non-staff line item	Institute	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	weight	
Silicon	Birmingham	250,000	-	1,000,000	1,000,000	950,000	-	-	-	-		100%
Equipment	Birmingham	355,000	-	180,000	465,000	-	-	-	-	-	1	100%
	Brunel	-	-	-	-	-	-	-	-	-		100%
	Liverpool	-	-	-	-	-	-	-	-	-		100%
	Oxford	355,000	-	180,000	465,000	-	-	-	-	-	1	100%
	Daresbury	-	-	-	-	-	-	-	-	-		100%
	RAL	-	-	-	-	-	-	-	-	-		100%
	Total	**710,000**	**-**	**360,000**	**930,000**	**-**	**-**	**-**	**-**	**-**	2	
Consumables	Birmingham	41,818	45,455	47,273	80,000	94,545	80,000	47,273	-	-	1	80%
	Brunel	20,909	22,727	23,636	40,000	47,273	40,000	23,636	-	-	0.5	80%
	Liverpool	20,909	22,727	23,636	40,000	47,273	40,000	23,636	-	-	0.5	80%
	Oxford	41,818	45,455	47,273	80,000	94,545	80,000	47,273	-	-	1	80%
	Daresbury	52,273	56,818	59,091	100,000	118,182	100,000	59,091	-	-	1.25	100%
	RAL	52,273	56,818	59,091	100,000	118,182	100,000	59,091	-	-	1.25	100%
	Total	**230,000**	**250,000**	**260,000**	**440,000**	**520,000**	**440,000**	**260,000**	**-**	**-**	**5.5**	
Travel	Birmingham	6,364	14,545	18,182	23,636	23,636	21,818	20,000	47,505	12,495	1	80%
	Brunel	3,182	7,273	9,091	11,818	11,818	10,909	10,000	23,753	6,247	0.5	80%
	Liverpool	3,182	7,273	9,091	11,818	11,818	10,909	-	-	-	0.5	80%
	Oxford	6,364	14,545	18,182	23,636	23,636	21,818	20,000	47,505	12,495	1	80%
	Daresbury	7,954	18,182	22,727	29,546	29,546	27,274	25,000	59,381	15,619	1.25	100%
	RAL	7,954	18,182	22,727	29,546	29,546	27,274	25,000	59,381	15,619	1.25	100%
	Total	**35,000**	**80,000**	**100,000**	**130,000**	**130,000**	**120,002**	**100,000**	**237,525**	**62,475**	**5.5**	

- All equipment purchased through one or two institutes; silicon via transfer to RAL when needed?
- Can Daresbury / RAL spend £52k on consumables this year?
- Award part of the non-staff costs for Daresbury and RAL as exceptions to Birmingham and/or Oxford?
- All costs are costs to STFC (100% for the labs and 80% to the universities)