



# **IOTA/FAST Research and Facility “5 year” Plan**

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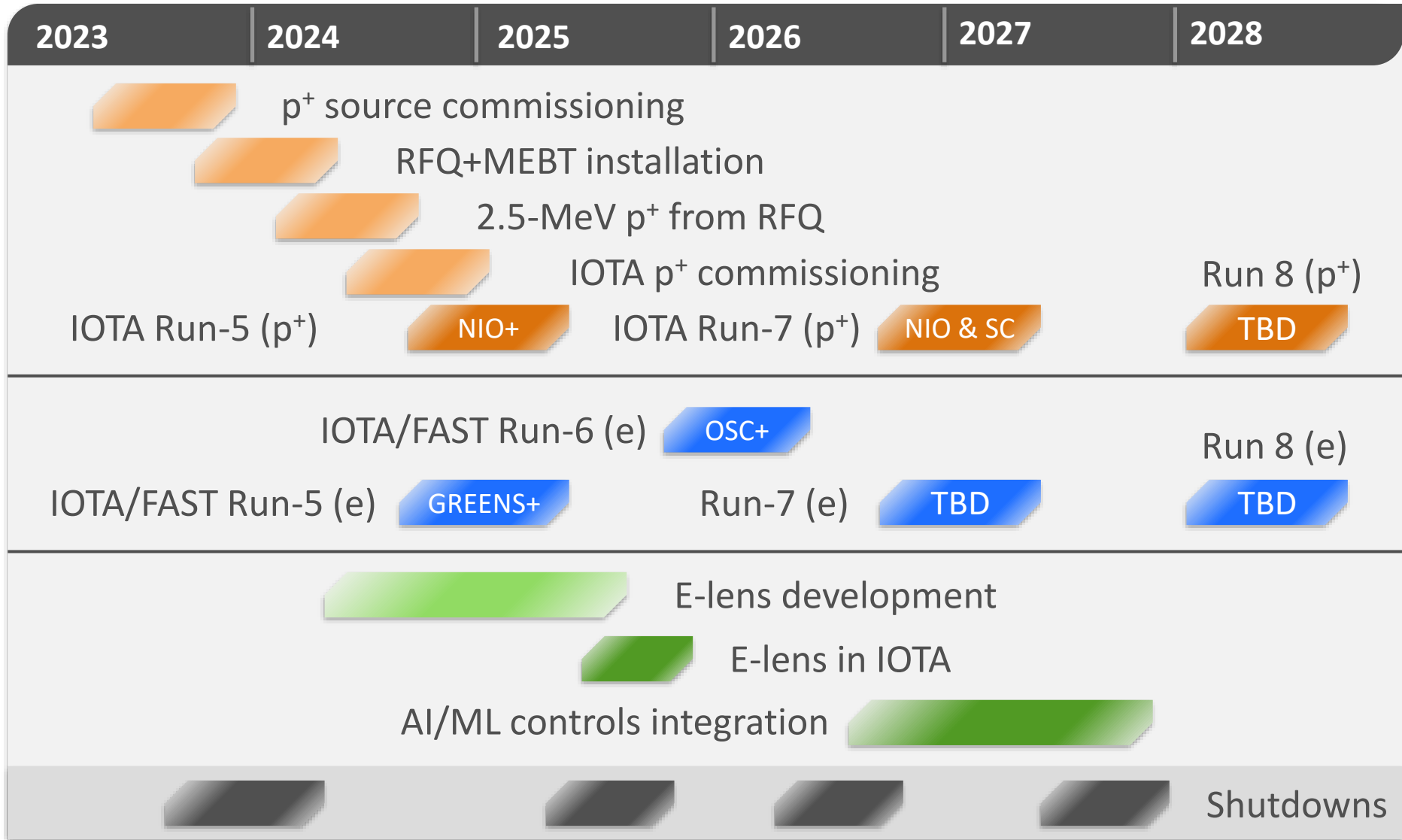
# IOTA/FAST Long-Term Strategy

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**IOTA/FAST is the US leading ABP research test facility, centerpiece of the US CAP:**

- 3-5(?) experiments per year; ~50(?) users; (Users' Facility?)
1. Accelerator & Beam Physics research with electrons:
    - now-Fall 2024, ~50% after 2024
  2. Accelerator & Beam Physics research with protons:
    - Starting ~Fall 2024
    - Electron lens ~Fall 2025
    - 50% or more after
  3. VTS (Virtual Test Stand) AI/ML control system:
    - First elements and test ~Fall 2026
  4. Accelerator Operations and Upgrades:
    - 6-9 mos/year
- <sup>2</sup> • 3 upgrades: proton injector (2024); e-lens (2025); VTS (2026)

# Expected IOTA/FAST Schedule: CY23-28



# Global View on FAST/IOTA: FY24-28

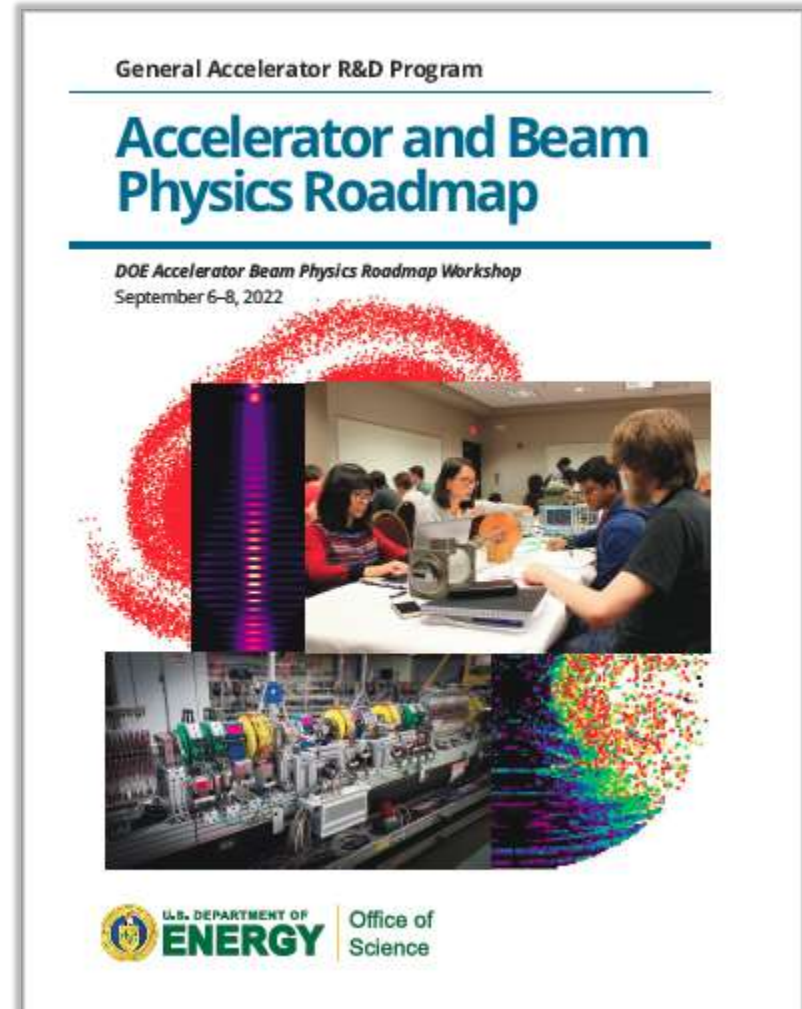
Area	Type	FY23	FY24	FY25	FY26	FY27	FY28
Headcount		13 (18-5)	18	18	19	19	19
KA24 AI/ML	Total \$M	1.74	1.67	1.77	2.24	2.24	2.03
	M&S \$M	0.150	0.11	0.16	0.43	0.43	0.22
	SWF \$M	1.59	1.563	1.612	1.814	1.814	1.814
KA25 Research	Total \$M	2.89	2.86	2.91	2.96	2.96	2.96
	M&S \$M	0.72	0.65	0.61	0.30	0.30	0.50
	SWF \$M	2.17	2.21	2.30	2.66	2.66	2.66
KA25 Operations	Total \$M	2.28	2.37	2.32	2.23	2.23	2.23
	M&S \$M	0.515	0.55	0.44	0.31	0.31	0.31
	SWF \$M	1.77	1.82	1.88	1.92	1.92	1.92
KA25 EQU	Total \$M	*0.308	0	0	0	0	0
<b>TOTAL \$M</b>		<b>7.212</b>	<b>6.904</b>	<b>6.996</b>	<b>7.428</b>	<b>7.428</b>	<b>7.413</b>
<b>Incl M&amp;S</b>		<b>1.69</b>	<b>1.31</b>	<b>1.21</b>	<b>1.04</b>	<b>1.04</b>	<b>1.03</b>

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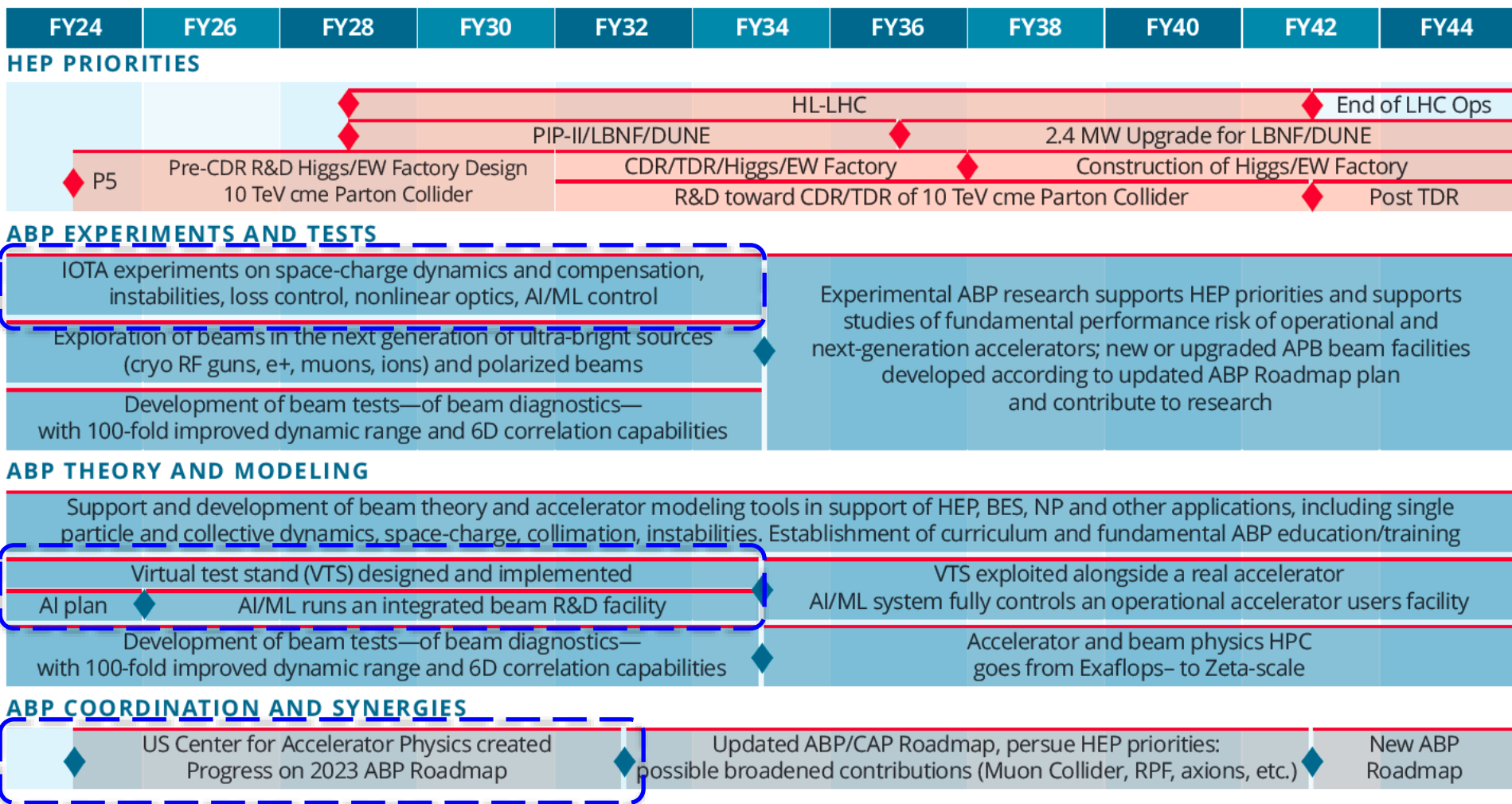
Back up slides

# High level – GARD ABP

- Roadmap approved 03/31/23
- It is:
  - On one hand – “all inclusive”
  - On another – “focused”
- DOE will follow up with changes in the GARD planning
  - After the P5 (Q1 FY24 or later)
- IOTA/FAST research program is central in several aspects:
  - Grand challenges 1, 2, 3, and 4
  - The only ABP facility; 1<sup>st</sup> VTS



# GARD ABP Roadmap



**Figure 1: ABP roadmap for the next two decades reflecting HEP priorities, beam physics experiments and tests, theory and modeling developments, and coordination and synergies.** Grey shading of HEP Priorities indicates projects in progress. Red diamonds indicate anticipated start and end years of major HEP facilities and dates of Snowmass/P5 particle physics strategy updates. Blue diamonds show expected completion dates of various accelerator and beam physics activities and major ABP roadmap or organizational updates.