ERL Roadmap - Delivery Plan

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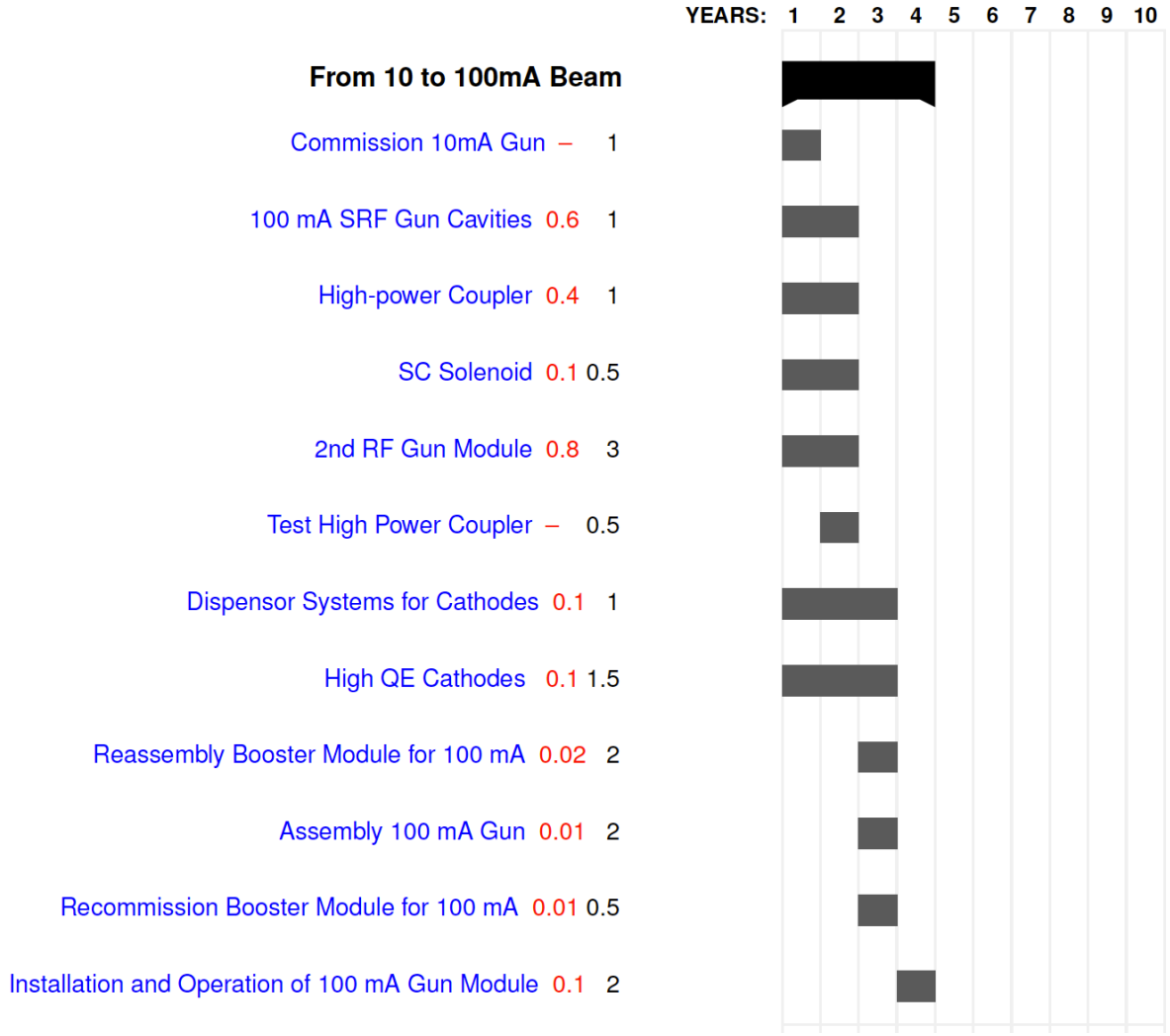
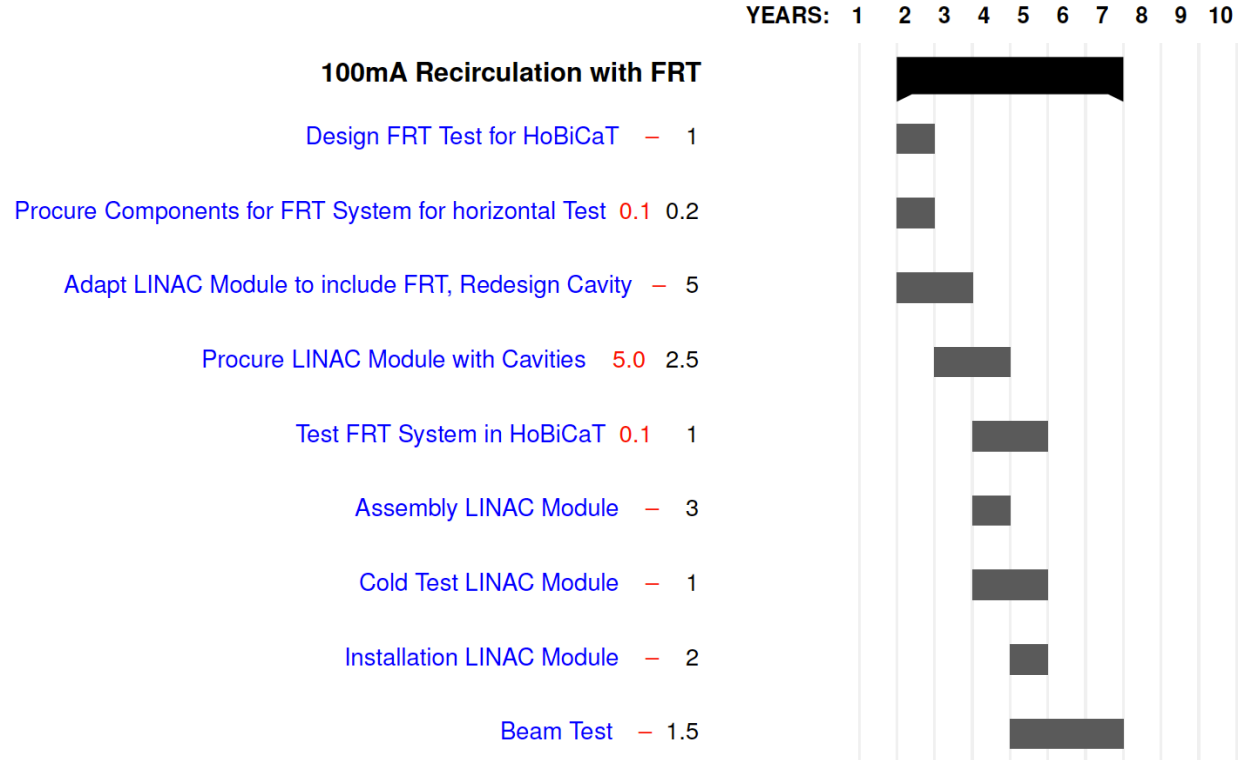
7.44 MCHF 33.2 FTE



2.24 MCHF 16 FTE



5.2 MCHF 17.2 FTE

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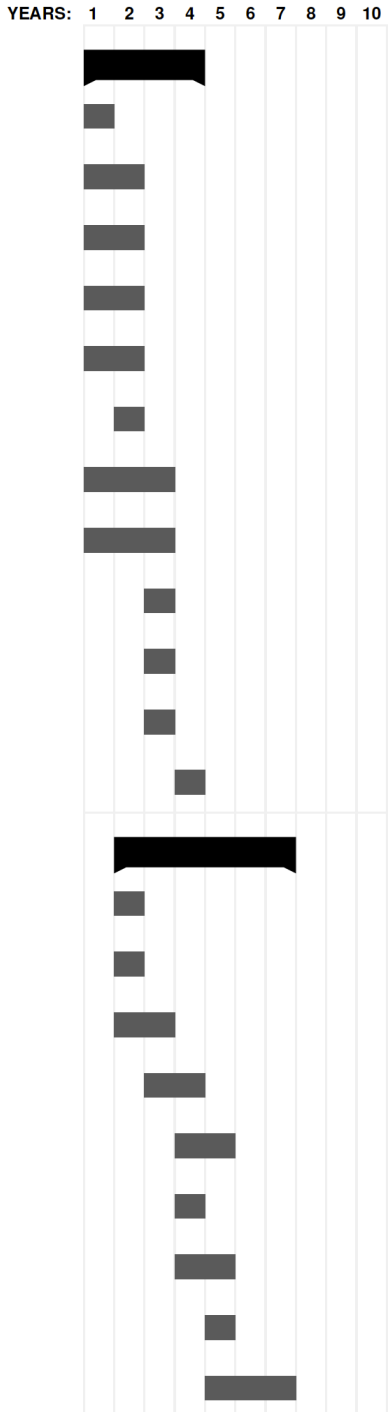
5.2 MCHF 17.2 FTE **From 10 to 100mA Beam**

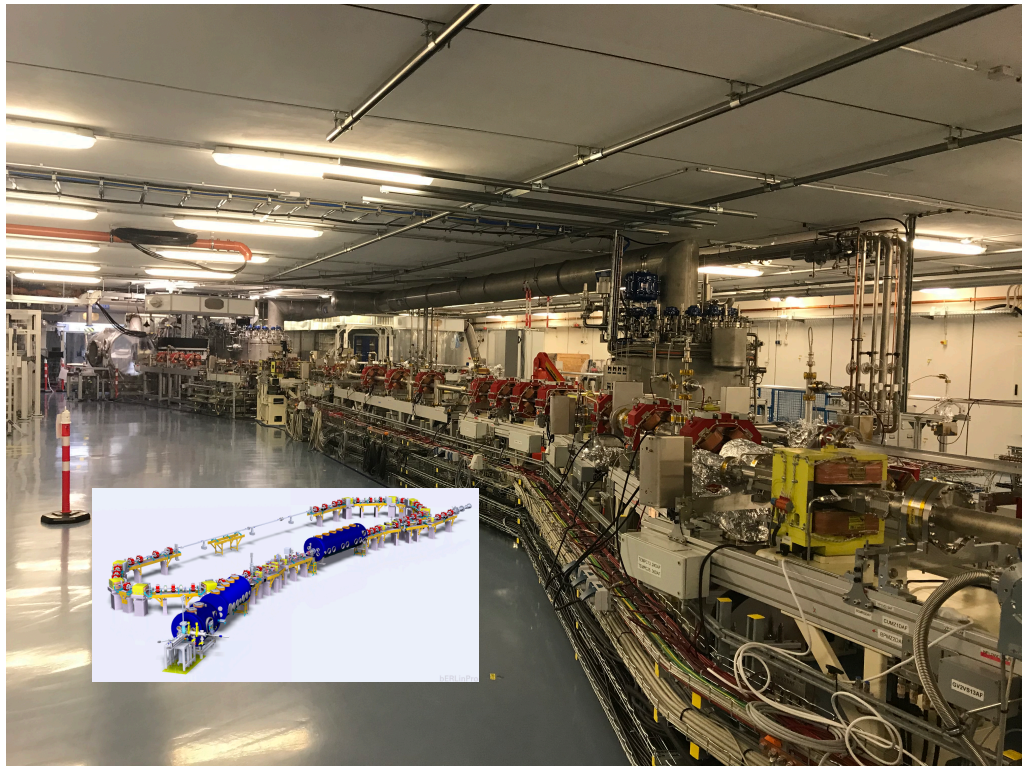
Commission 10mA Gun	–	1
100 mA SRF Gun Cavities	0.6	1
High-power Coupler	0.4	1
SC Solenoid	0.1	0.5
2nd RF Gun Module	0.8	3
Test High Power Coupler	–	0.5
Dispensor Systems for Cathodes	0.1	1
High QE Cathodes	0.1	1.5
Reassembly Booster Module for 100 mA	0.02	2
Assembly 100 mA Gun	0.01	2
Recommission Booster Module for 100 mA	0.01	0.5
tallation and Operation of 100 mA Gun Module	0.1	2

2.24 MCHF 16 FTE **100mA Recirculation with FRT**

Design FRT Test for HoBiCaT	–	1
mponents for FRT System for horizontal Test	0.1	0.2
LINAC Module to include FRT, Redesign Cavity	–	5
Procure LINAC Module with Cavities	5.0	2.5
Test FRT System in HoBiCaT	0.1	1
Assembly LINAC Module	–	3
Cold Test LINAC Module	–	1
Installation LINAC Module	–	2
Beam Test	–	1.5



7.44 MCHF 33.2 FTE (2022-2026+)



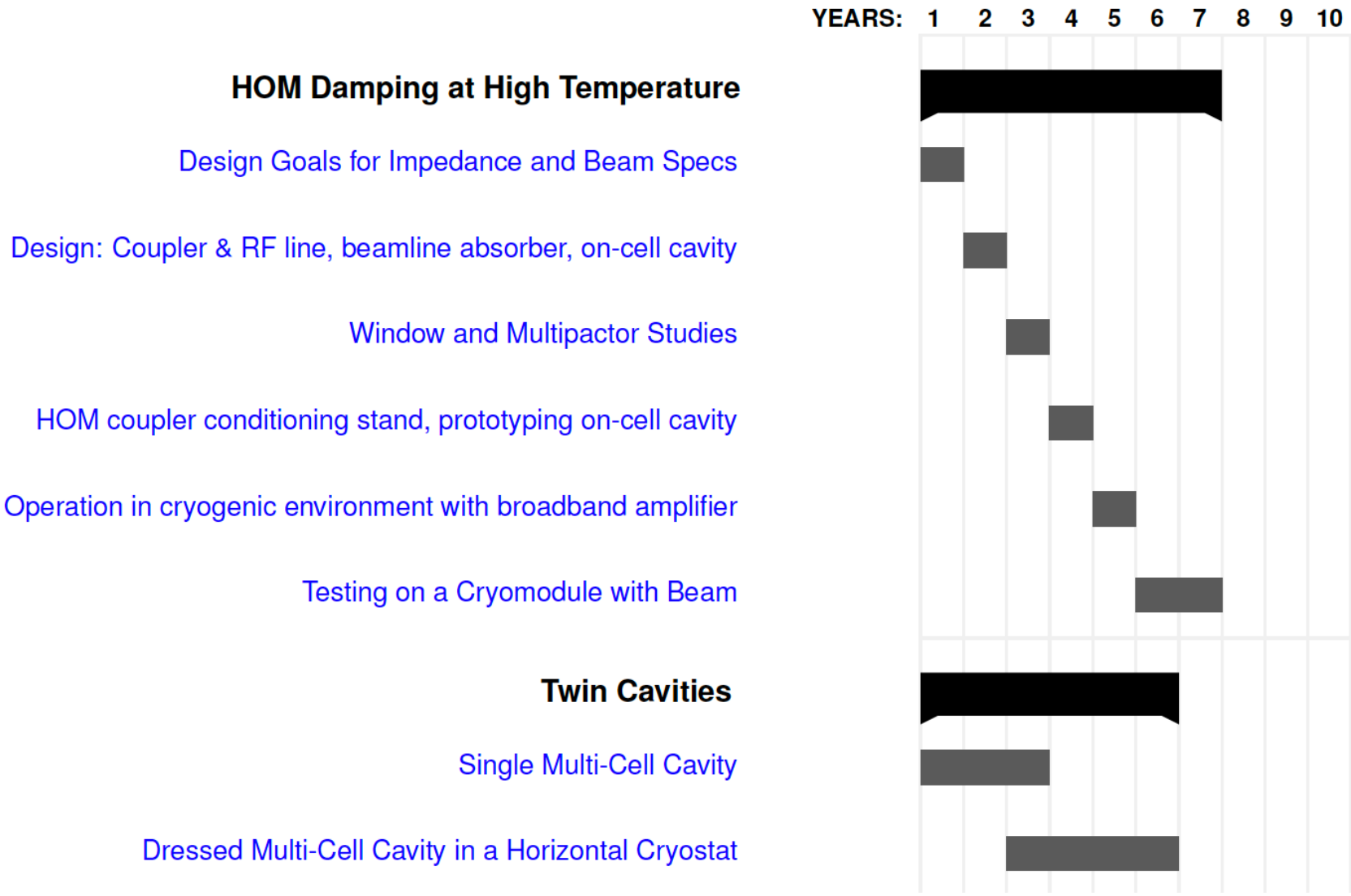
First ERL Facility to operate 100mA in single turn ERL with FRT control

A - Upgrade SRF gun to 100 mA (currently power coupler limited)

B - Adding 1.3 GHz module, equipped with FRT, to complete facility.

→ R&D on stability, emittance preservation, beam loss, bunch length..

HOM+Twin


YEARS: 1 2 3 4 5 6 7 8 9 10
HOM Damping at High Temperature
Design Goals for Impedance and Beam Specs
Design: Coupler & RF line, beamline absorber, on-cell cavity
Window and Multipactor Studies
HOM coupler conditioning stand, prototyping on-cell cavity
Operation in cryogenic environment with broadband amplifier
Testing on a Cryomodule with Beam
Twin Cavities
Single Multi-Cell Cavity
Dressed Multi-Cell Cavity in a Horizontal Cryostat