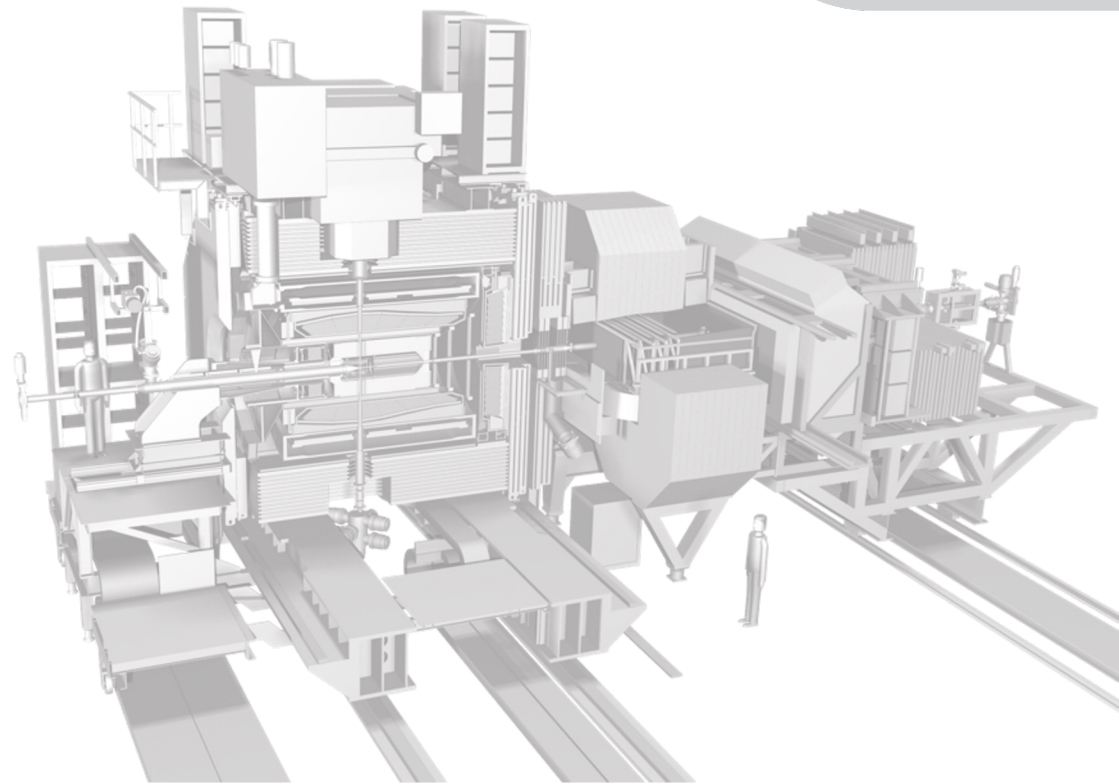


PANDA Strategy

Klaus Peters

Spokesperson

GSI Darmstadt / Goethe U Frankfurt

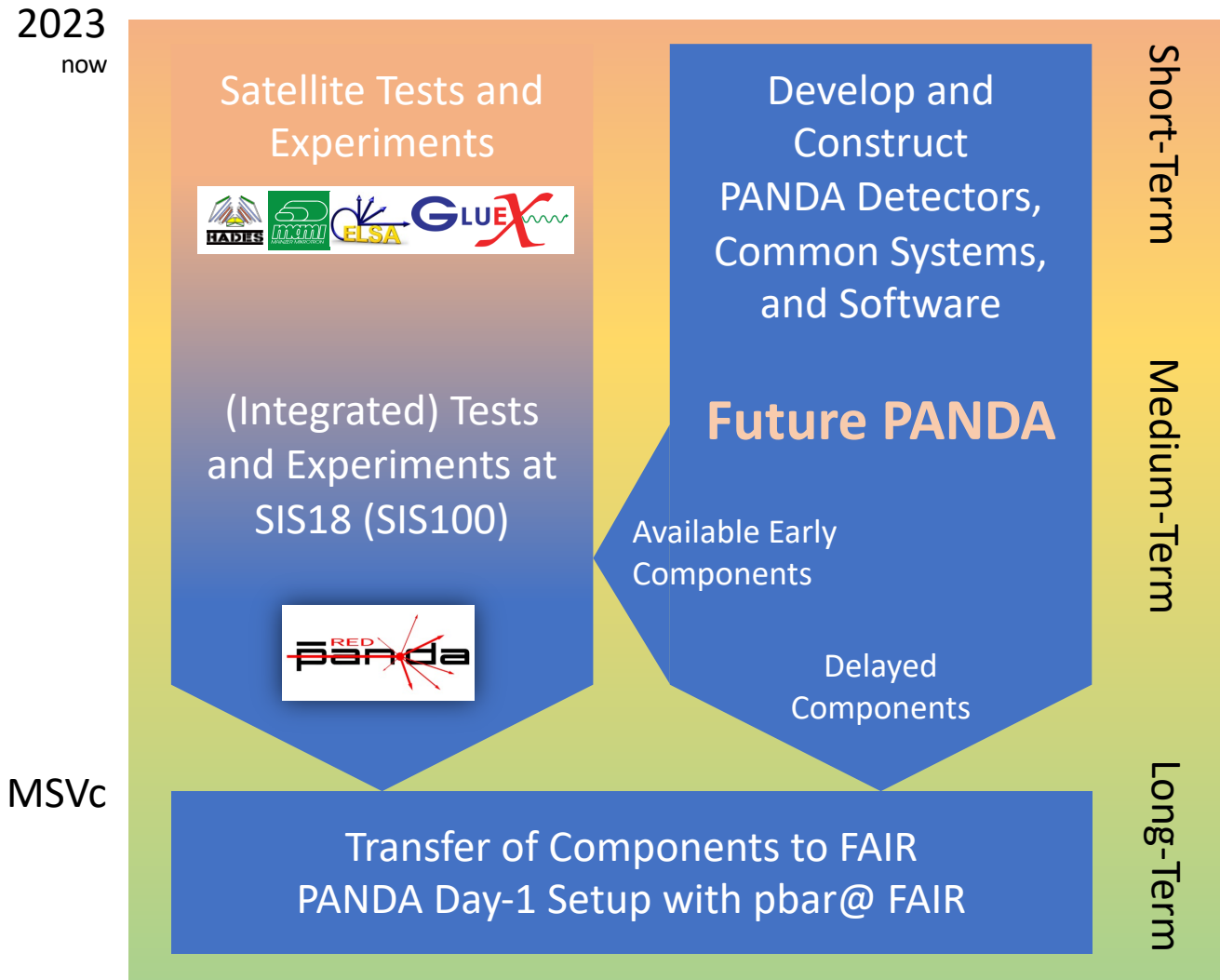


GSI Research Retreat July 18-19, 2023

PANDA Strategy (as of ECE,JSC,RRB Summer 2023)



short reminder



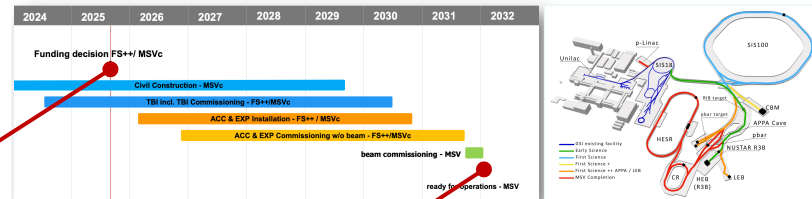
2024 2026 2028 2030 2032 2034 2036 2038 2040

Starting point

2023 re-baselining report

Ideally start with the PANDA solenoid when antiprotons are available

Outlook: Steps beyond FS & FS+: FS++ APPA/LEB & MSVc



- Working assumption pending on decisions by the shareholders of FAIR
- Steps beyond FS+ require additional funding, ideally to be in place by Q3 2025 so that the existing FSB Team and contractors are still in place
- CR layout modified according to MAC recommendation

- Decision 2025
- FS++ APPA/LEB ready for operation – 2030
- MSVc ready for operation – 2032

FAIR project time schedule 2023 re-baselining report | 05.07.2023

2024 2026 2028 2030 2032 2034 2036 2038 2040

2025 Q3

pbar beam available

NB: Panda Dipole is part of HESR

2024 2026 2028 2030 2032 2034 2036 2038 2040

detectors will not be ready in one go
due to funding/missing groups and necessary R&D – thus we plan

- 3 Phases of Operation (planning basis)
 - Phase Ia - like Day-1
 - Phase Ib - like Phase 1 completion
 - Phase II - like to Phase 2
- 3 Phases of detector construction and installation (planning basis)
 - the availability of detectors must be scrutinized
 - technology of unbuilt detectors must be scrutinized
 - phases must be optimized concerning detectors, funds and physics

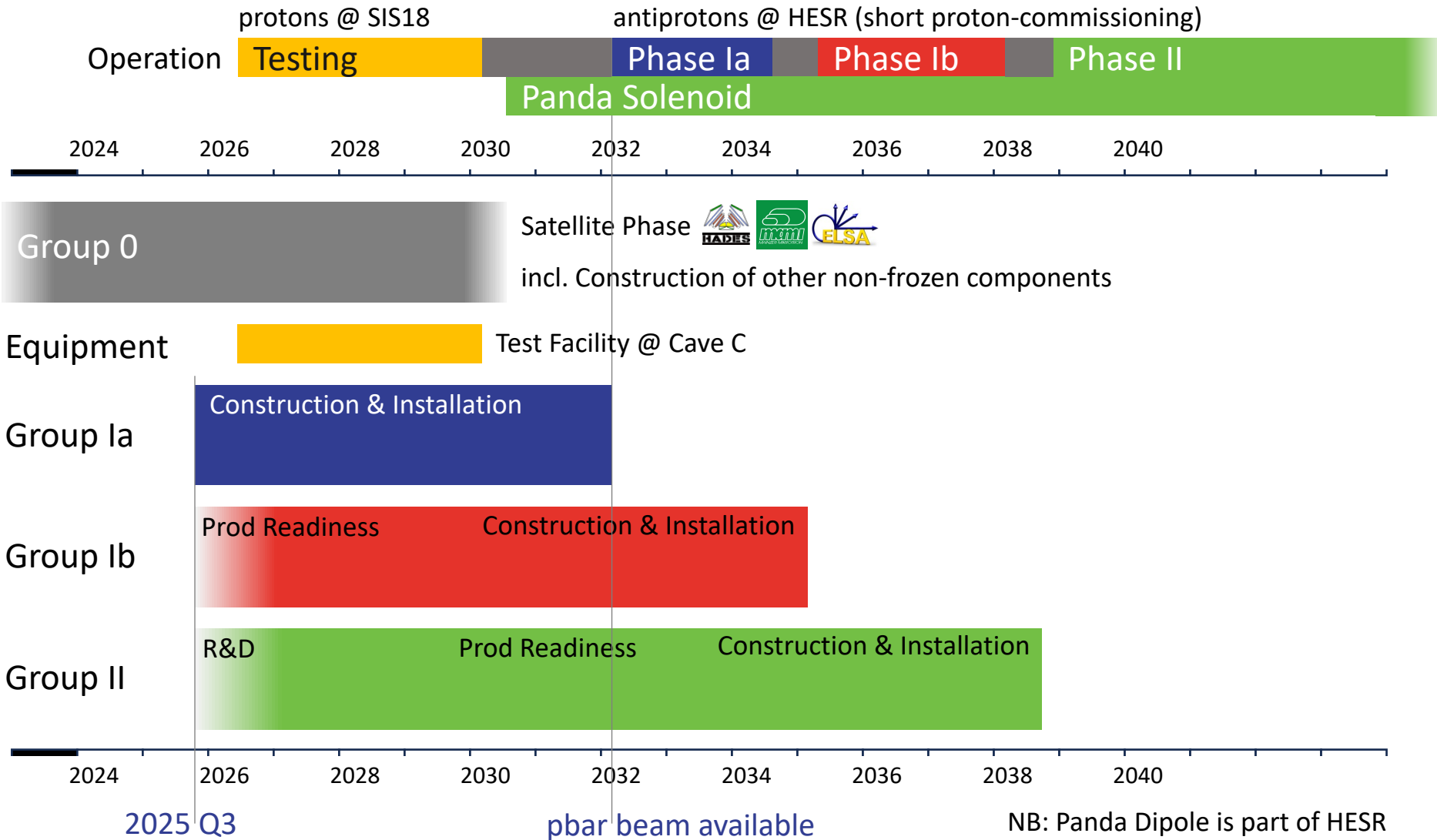
2024 2026 2028 2030 2032 2034 2036 2038 2040

2025 Q3

pbar beam available

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PANDA @ FAIR (starting with PANDA solenoid)



PANDA @ FAIR (starting with PANDA solenoid)



protons @ SIS18

antiprotons @ HESR (short proton-commissioning)



2024 2026 2028 2030 2032 2034 2036 2038 2040

Group 0

Satellite Phase   

incl. Construction of other non-frozen components

Equipment

Test Facility @ Cave C

Group Ia

Construction & Installation

Group Ib

Prod Readiness Construction & Installation

Group II

R&D Prod Readiness Construction & Installation

but the super conducting cable needs development
 → the PANDA Solenoid might be difficult to build until 2030

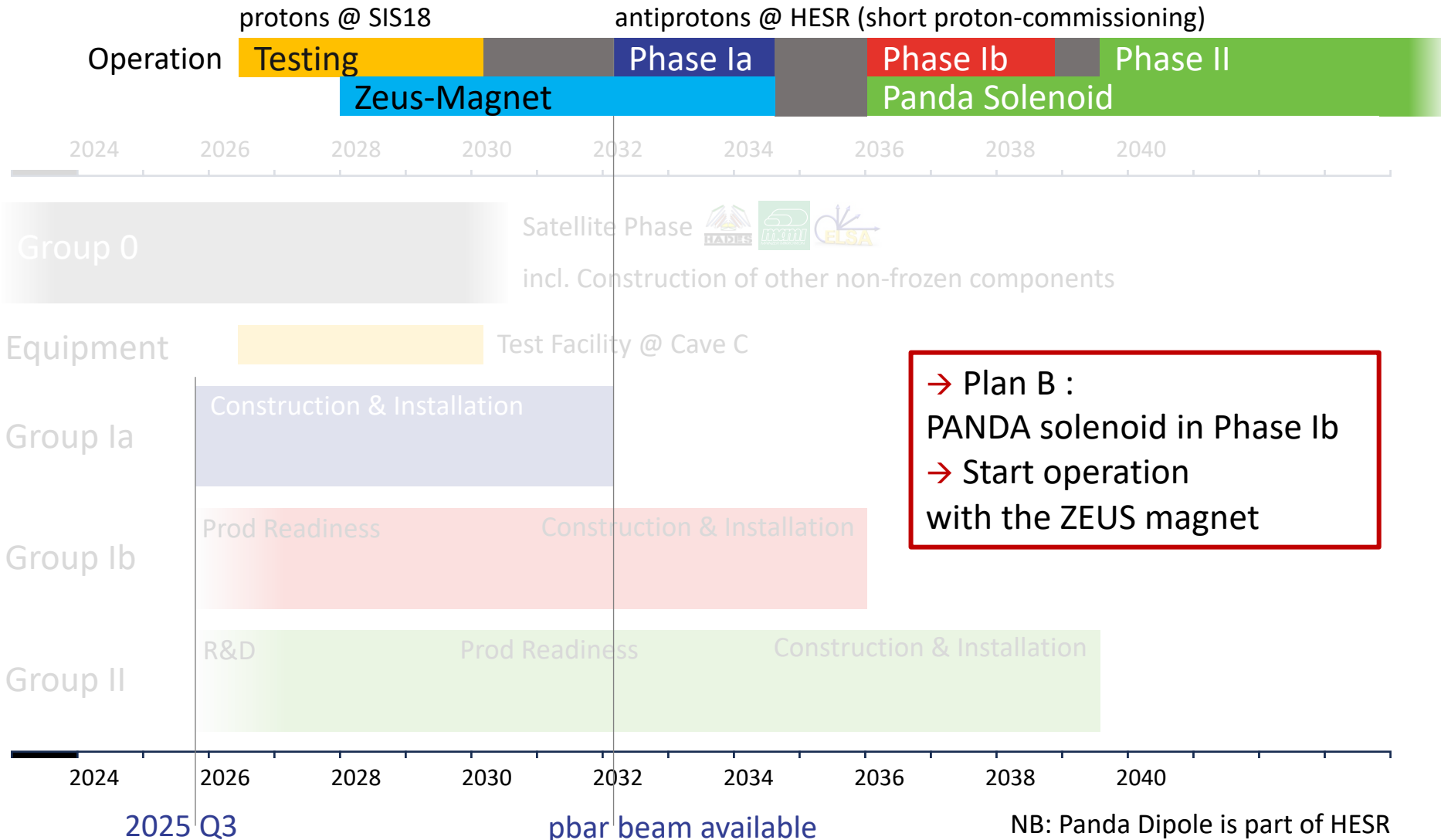
2024 2026 2028 2030 2032 2034 2036 2038 2040

2025 Q3

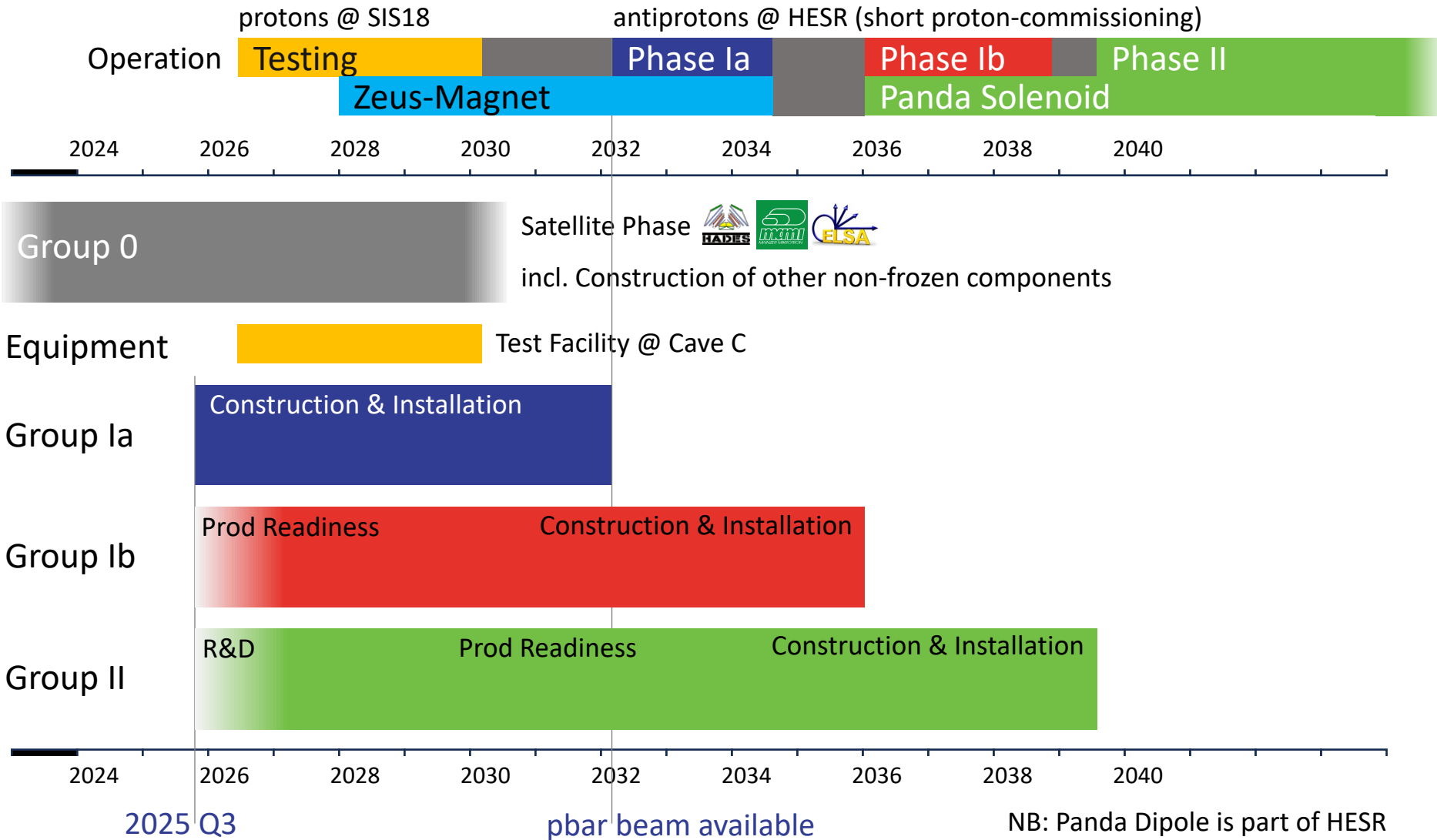
pbar beam available

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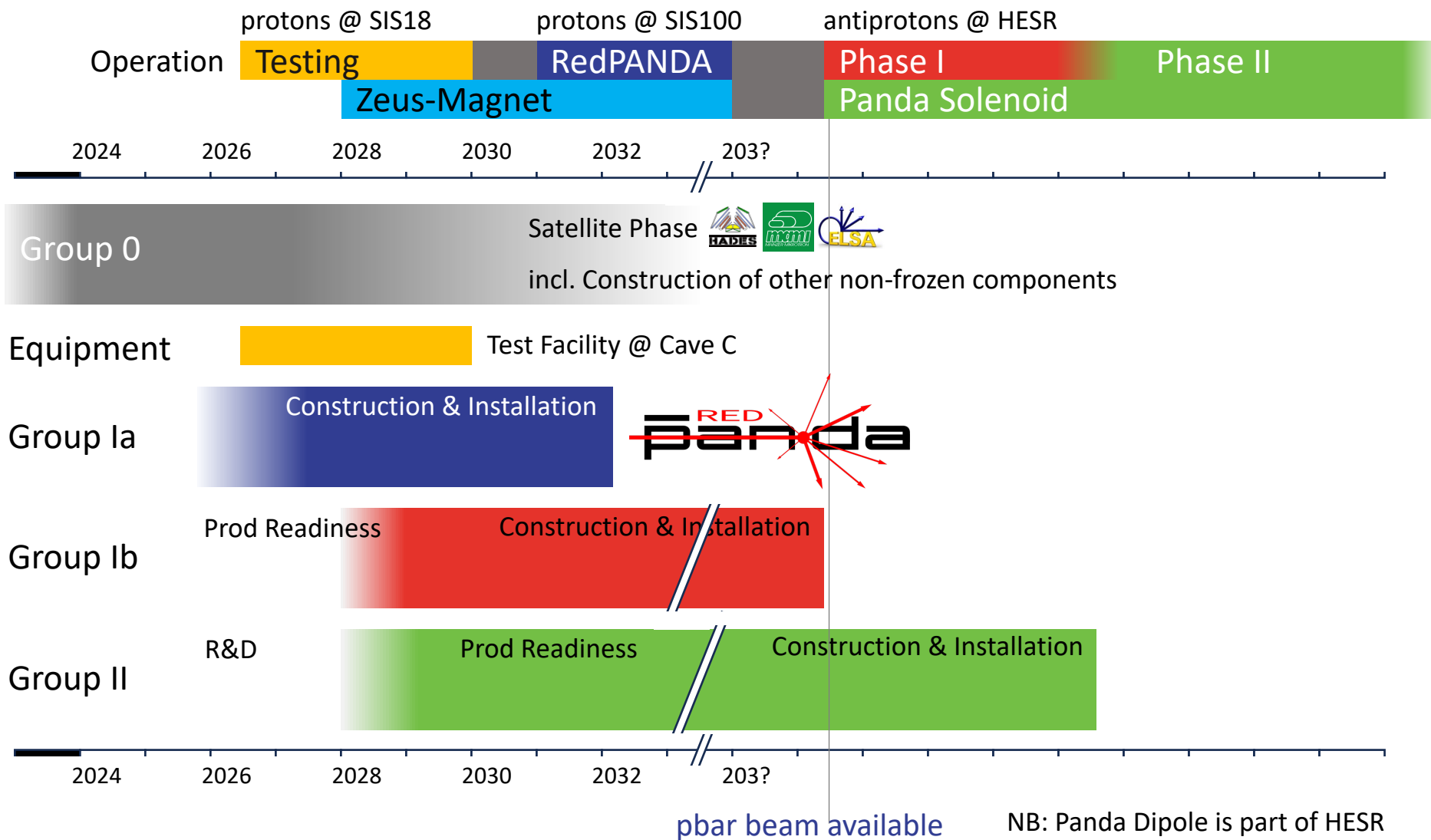
PANDA @ FAIR (starting with PANDA solenoid)



PANDA @ FAIR (starting with ZEUS magnet)



PANDA @ FAIR (RedPANDA in case of severely delayed MSVc)



Conceptual PANDA Strategy / Summary



Goal is start of operation in 2032 (~8 years)

- Ideally build the detector as described in all the TDRs
 - But this will not be meaningful or possible for all detectors
 - Solenoid needs time for development, may be too late for 2032

Many open question

- on Detectors
 - which detectors need new concept ?
 - which detectors need redesign ?
 - funding/groups for the detectors ?
 - a first list shall be available as input to the FAIR project mgmt for a MSVc schedule for the FC Dec 23
- on Magnets
 - readiness ? total cost for use of ZEUS
 - define necessary steps of redesign of PANDA Solenoid
- on Physics
 - which physics can be done in which detector phase ?
 - which physics can be done with protons and ions in SIS-18/100
 - interaction with HADES and CBM and our PANDA Theory Advisory Group
 - plan and execute physics simulations
- on Testing
 - first elements to be tested in CaveC are Koala and a STT segment (s. JR's talk)
 - we need a testing beamline for Phase Ia and may be even Ib and II, thus beyond 2030
- report to ECE/ECSG/JSC when planning is more advanced

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- PANDA retreat Sept 2023**
-
- Three red arrows originate from the text "PANDA retreat Sept 2023" and point to the blue bullet points for "on Detectors", "on Magnets", and "on Physics".



panda

thank you

