



Canada's national centre for  
particle and nuclear physics  
and accelerator-based science

# Update from TRIUMF Management on ARIEL Timeline

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RIB Transport prototype evaluation complete

ISAC-ARIEL enclosure completed

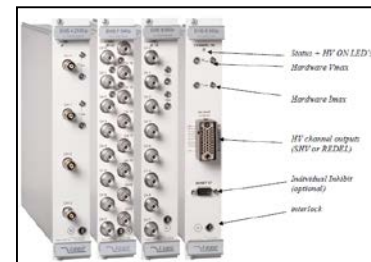
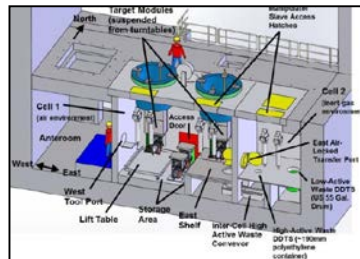
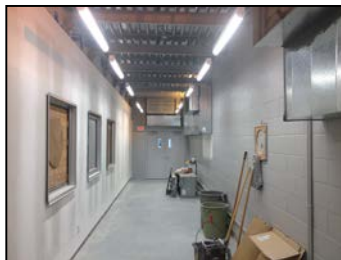
Contract for Hot Cell signed

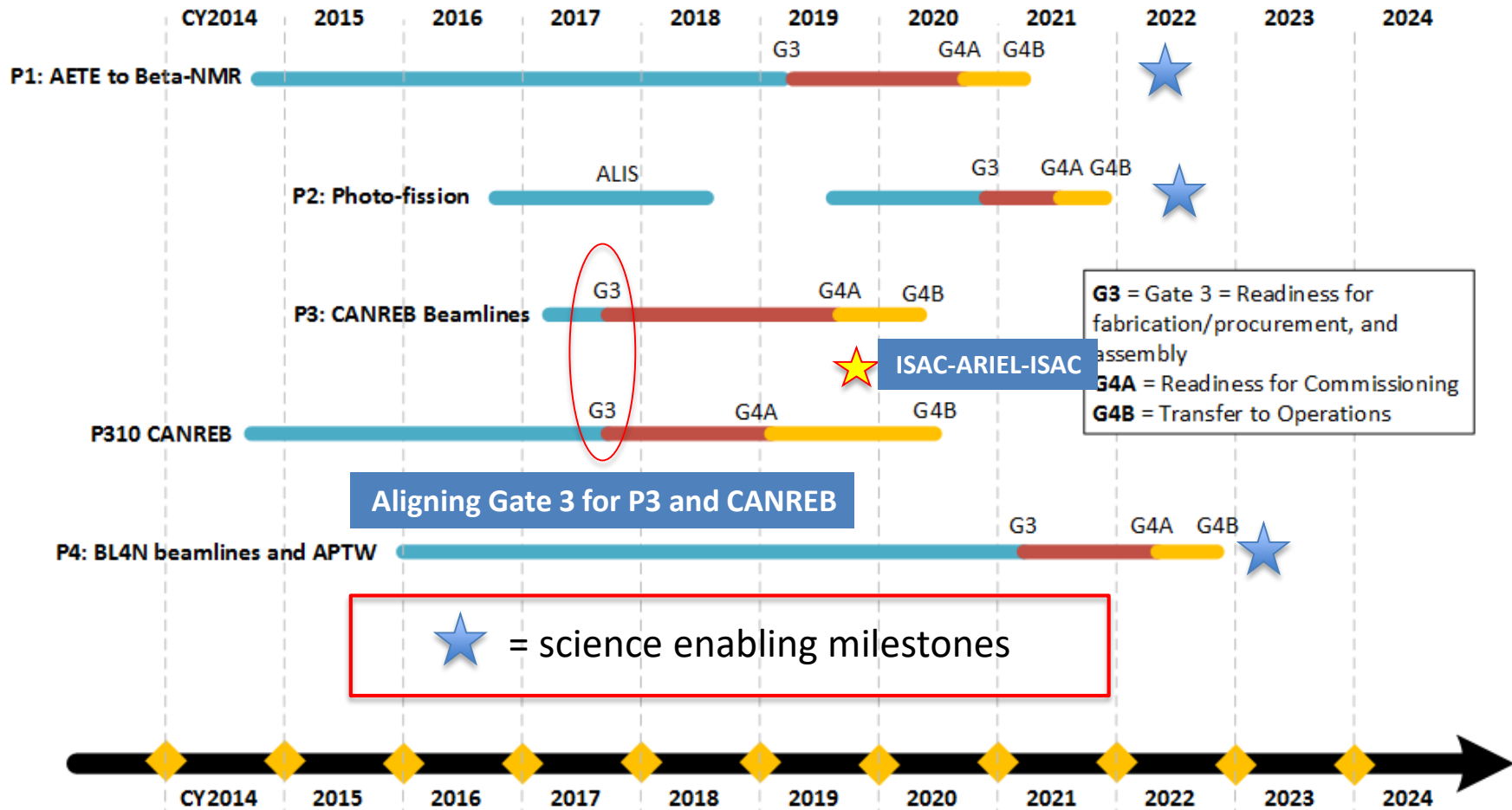
EBIS first beam at MPI-K (1A @ 3KeV)

HRS magnets accepted at vendor

Nier spectrometer magnet shipped

Vendor for RIB line optics power supplies selected





As presented during ARIEL Town Hall, January 10, 2017

	Science enabling milestone	Month/Year		
PHASE 3	First EEC approved experiments with high-mass accelerated beams from ISAC utilizing the CANREB/ARIEL EBIS charge breeder	10/2020 ★ Fall 2019	→	Higher intensity, cleaner high-mass accelerated beams
PHASE 1	First EEC approved beta-NMR experiments with photo-produced $^8\text{Li}$	03/2022		
PHASE 2	First EEC approved experiments with photo-fission RIBs from the e-Linac	06/2022	→	More RIB hours, cleaner n-rich RIBs
PHASE 4	First EEC approved experiments with RIBs from ARIEL Proton target	03/2023	→	3 parallel RIBs

- Dates based on Monte Carlo analysis of schedule
- Current best estimates but with high confidence

➔ Only feasible if we **focus manpower** on key deliverables, such as RIB beamline installation, CANREB installation, Electron Target Station Design

- **Strategy**
  - For Schedule 133 (Oct. 11 → x-mas):
    - utilise simple targets in terms of production, Ta and SiC, simple sources (SIS with limited TRILIS operation and FEBIAD) and
    - long runs/ few elements
    - no development
- **Motivation**
  - Try to free up more personnel to support ISAC refurbishment and ARIEL-II while continuing with Operations
- **Targeted benefits**
  - Free up LIS and beam delivery personnel, as well as personnel from Targets and Ion Sources

- General shutdown activities will be limited to the absolutely necessary.
  - big project: installation of a new main magnet power supply for the cyclotron.
  
- Up to 8 week ISAC shutdown extension in Spring 2018 in order to achieve:
  - the installation of CANREB equipment and CANREB related ARIEL-II RIB transport beamlines in 2018 → CANREB Science in 2019
  - major advances in the ISAC refurbishment program, and
  - major advances in the ARIEL target design.
  
- Assess if less than 8-weeks of ISAC shutdown extension is feasible in Fall 2017 with the completion of the detailed shutdown planning (SAS):
  - Communication to users with the call for beam requests.

- Implementation of High Level Applications → increase RIB efficiency tuning
  - more effective use of the ISAC RIB production hours,
  - reduced impact of the extended ISAC shutdown.
  
- Measure impact of ISAC operation in 2017 & extended ISAC shutdown in 2018 on manpower availability for ARIEL and ISAC refurbishment
  - Results will be presented to the TUG AGM in Summer 2018.
  
- Any potential impact of the ARIEL project on operations in future years will be discussed in advance with the users.
  - It remains a priority for TRIUMF to limit the impact of the ARIEL project execution on beam delivery.
  - Planning for 2019 and beyond will be informed by the measured impacts of the 2017/18 actions as well as the efficiency improvements for beam delivery.



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Thank you!  
Merci!

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