
CERN

# ABT FELL Request

W. Bartmann, M. Fraser (SY-ABT-BTP)

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# Motivation

- ISOLDE low energy beam lines are poorly understood making operation difficult and any upgrade to the facility riskier and more challenging:
  - Missing documentation: for some elements it is simply not known what is on the beam line
  - No optics model exploitable by the ISO-OP team
  - No high-level physics parameters to control or link to optics in LSA
- SY-ABT has gained experience gained with electrostatic transfer lines at ELENA and has the competence to tackle the ISOLDE beam lines
- Puma@ISOLDE has highlighted the problem when new experiments want to exploit old infrastructure:
  - Working with BE-GM group on future steps to get systematic survey data into the optics sequences
  - Plan to reverse engineer MADX optics sequences and use Puma@ISOLDE as a first step in this effort

# Timeline

- A longer-term project starting next year…
- SY-ABT will support up to LS3
  - We will define a checkpoint in the middle to re-assess resources needs
- FELL (‘Accelerator Physicist’) shall start in second half of 2023:
  - Application to be submitted in first selection committee next year

# FELL activities

- Coordinate the effort to document the ISOLDE beamlines:
  - Collect information and understand what is installed on the beam lines ensuring all drawings and documents are collected in electronic format on EDMS
  - Support the Configuration Management team for an implementation in the Layout DB
  - Work with the Survey Team to reverse engineer MADX sequence files followed by survey files for implementation in GEODE DB
- Support the ISO-OP team to implement CERN standard optics models and tools as successfully achieved at ELENA:
  - LSA, YASP etc.
- Carry out electrostatic simulations of transfer line elements to build a linear optics model of the transfer line
- Carry out optics measurements to characterize MADX optics model
- Start to build an optics model of the ISOLDE separators and agree on an optics and operation strategy in collaboration with ISO-OP
- As needed, support the installation of new ISOLDE experimental requests

Thank you !