

A brief status summary of MEIC detector work and plans for fall 2013

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Recent developments

MEIC ring layout with two IPs complete

- Work ongoing to compactify non-IR subsystems
 - Revised version should be available shortly

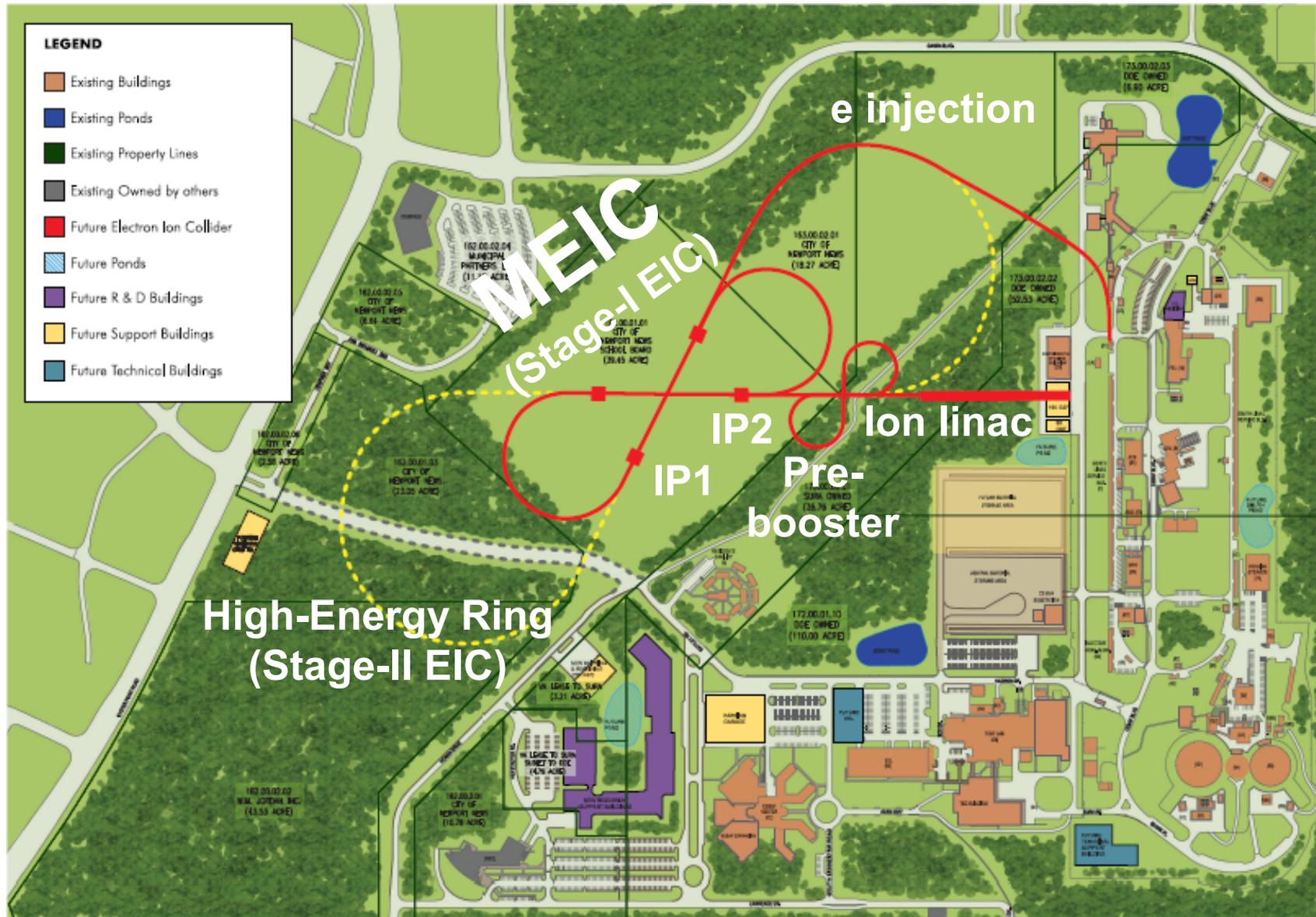
The standard asymmetric IR has been optimized

- Can take full advantage of iron-free dual solenoid
- Reduces accelerator challenges, in particular for electrons

A new unified central detector concept has been developed

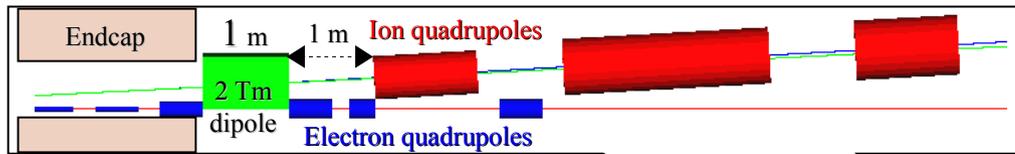
- The two MEIC IPs both use 4 m long solenoids with 3 m diameter
- A low-cost implementation could use the CLEO and BaBar 1.5T magnets
- Iron-free, 3T dual-solenoids with similar bore but larger endcaps can be substituted for better performance at one or both IPs.
- Endcap design and details of the layout could be varied between magnet and IP options to test various approaches – but one baseline solution will be provided

MEIC with 2 IPs – layout on the JLab site

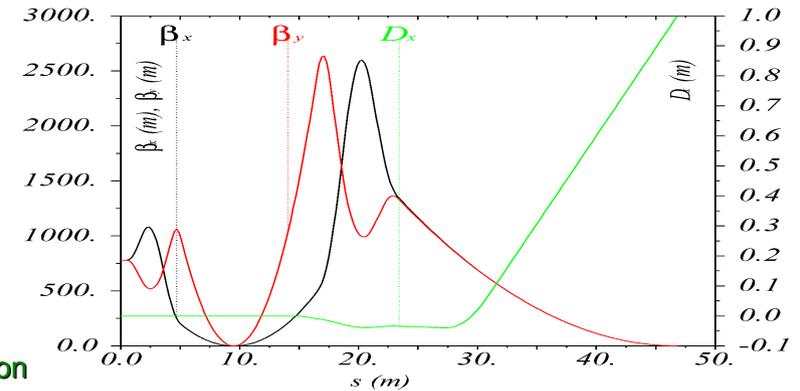


- Note that the future stage-II ring is still not a „site-filler“ and may need adjustment.

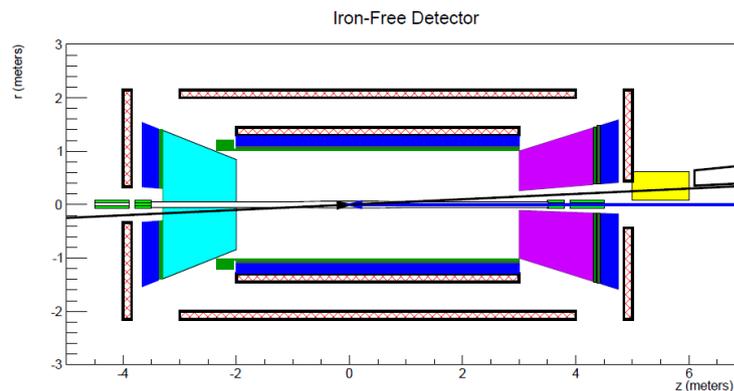
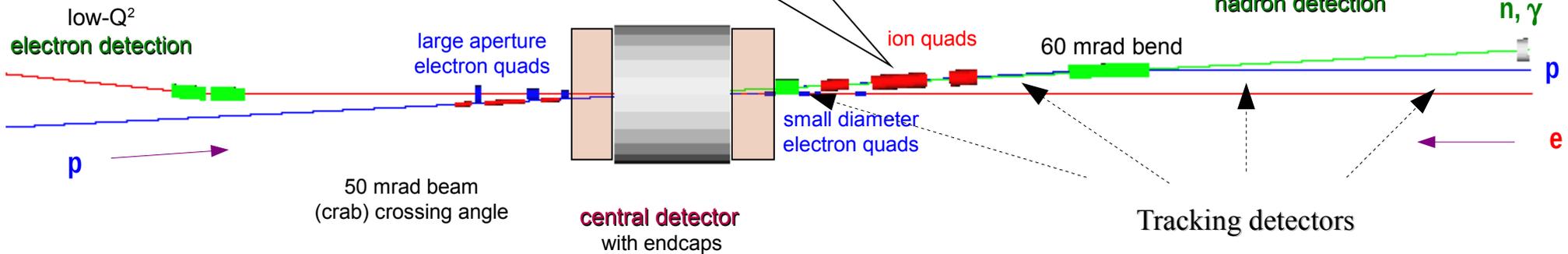
LDRD proposal for forward processes with light ions



(from GEANT4)



small angle
hadron detection



Cartoon of central detector based on dual solenoid but using the previous iteration interaction region design

- The global IR design is ready
- Now need to develop
 - Detailed layout of the detector
 - Full simulation using realistic event generators for forward processes.
- **LDRD proposal submitted!**

Steps for easier user involvement

Detector implementation using standard JLab simulation tools

- Unified central detector and IR concepts will streamline development
- Central detector will be implemented in GEMC 2.0 during early fall of 2013
- Fast MC capability will officially be added to GEMC (M. Ungaro)
 - Will use same geometry data base as GEANT4
 - Will also be available for all 12 GeV applications
- Tracking will be available in late fall of 2013 in collaboration with Saclay (S. Procureur)
- LDRD proposal submitted to support work on forward processes and detectors

Easier access for users to MEIC detector development

- JLab will provide a baseline detector concept and help users to define suitable projects
 - Scope, deliverables, and timeline will be tailored to individual users
- Joint work meetings with accelerator will continue for discussions of IR and forward detectors
 - Every Thursday at 1 pm on 7th floor of ARC building – only local access
- A new series of weekly simulation meetings will start in the fall of 2013 with remote access

Proposals for Generic EIC Detector R&D program

- JLab will provide support for users who want to submit R&D proposals
- Collaboration with BNL (PHENIX?) on implementation of ongoing R&D projects in GEMC?