

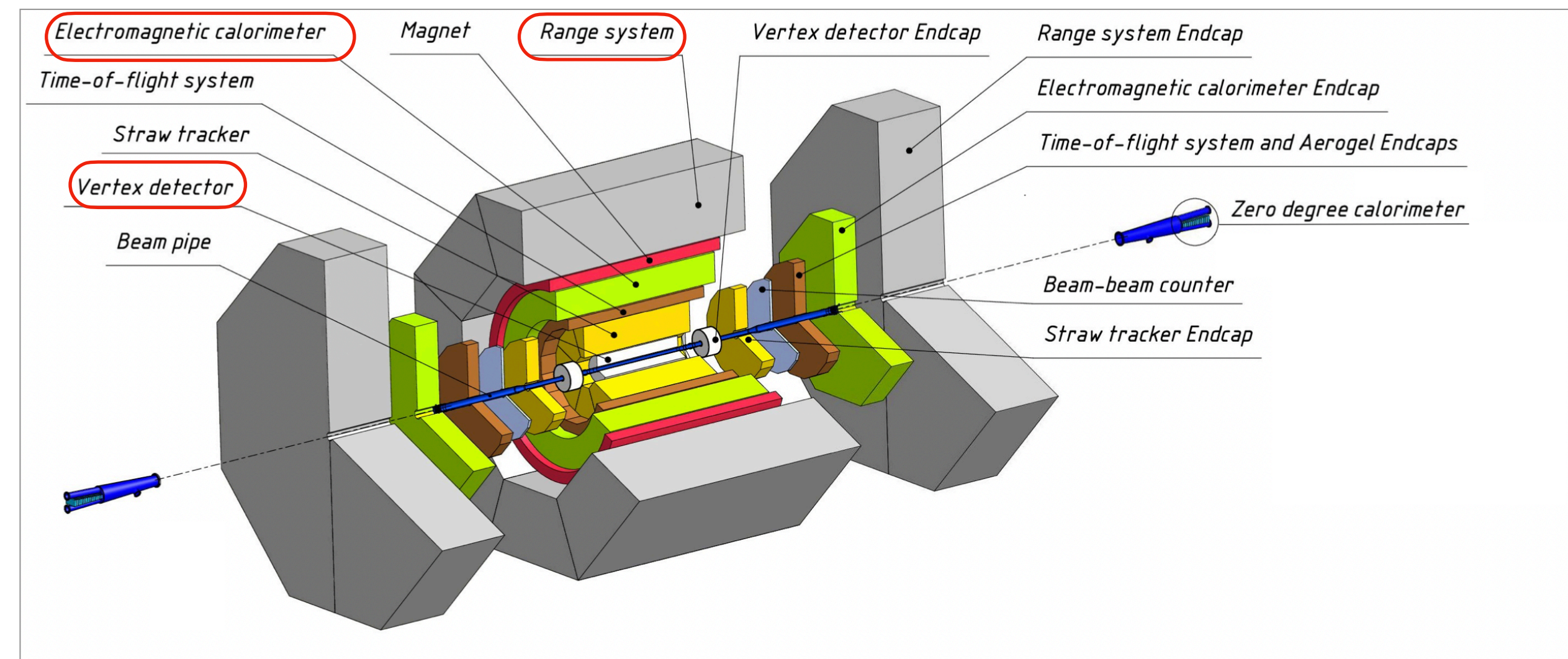
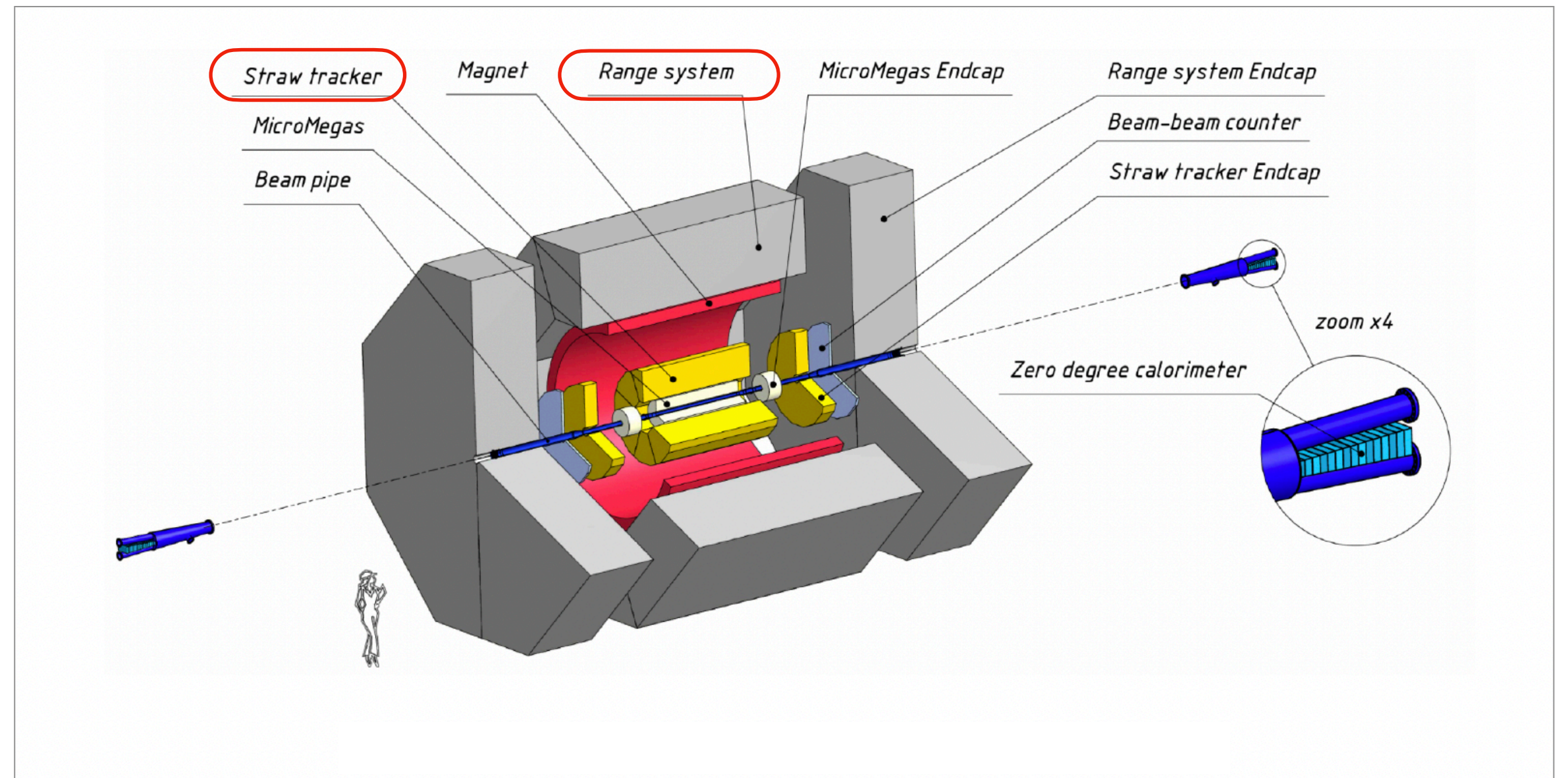
SPD Online filter: general requirements to move forward

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Event unscrambling

For each time slice

- Reconstruct tracks and associate them with vertices
- Determine bunch crossing time for each vertex
- Associate ECAL and RS hits with each vertex (by timestamp)
- Attach unassociated tracker hits in a selected time window according to bunch crossing time
- Attach raw data from other subdetectors according to bunch crossing time
- Call the block of information associated with each vertex an event
- Store reconstructed events



Debugging requirements

- Initial testing:
 - Agreed interfaces and data formats
 - Simplified simulated data: properly packed “white noise”
 - Low amount of data ($\gg 0,1\%$ of expected average)
- Functional testing:
 - Simulated data partially close to real data, which will allow debugging of some algorithms, and some workflows
 - Data amount (0,1 - 1% of expected average)
- Pre-production testing:
 - Simulated data of whole systems
 - Data amount (1 - 10% of expected average)

Debugging workflow

- Offline system:
 - MC production with incremental growing of simulated data
 - Agreed data organisation (to allow different types of debugging)
 - Physics group: algorithms and data production control
- Incremental growing of Online filter prototype
 - Estimation of required set of services: software distribution and deployment
 - Formalisation of workflows
 - Data sources: mapping, geometry etc.
 - VM to real HW (on small scale)

Expected steps in 2024

- MC production workflow in offline system:
 - Agreed data model and data organization
 - Data management system in place
 - SPDRoot Integration with middleware
 - Migration from SPDRoot to Gaudi (manpower issues)
- OnLine filter
 - More attention to framework and reco. algorithms: simulated data is needed
 - Definition and implementation of obvious data processing pipelines