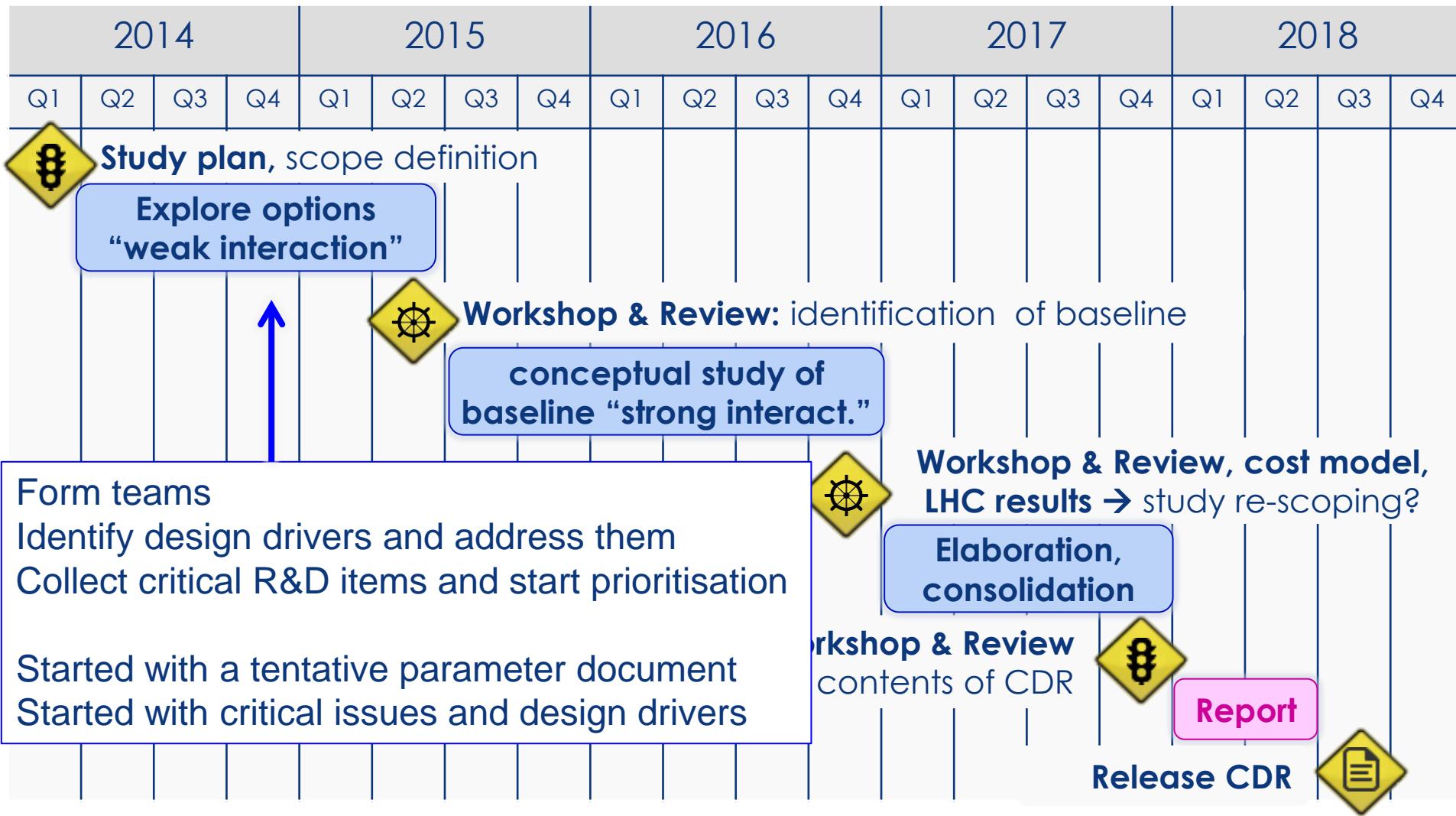


FCC-hh Study Scope



The Way Forward

- We want to form a collaboration
 - Non-committing expressions of interest for contributions by the end of May
 - This will largely a management activity
- But it requires technical discussions to define the contents of the contributions
 - What are the challenges?
 - What needs to be done?
- Would like to have some (video) meetings to
 - For reviews of the issues and technical discussion
 - Provide input for the management
- Will setup mailing lists to which people can subscribe
- Will start in the breakout session

Needs

- Need experts to prepare the baseline choice in a year from now
 - Identify design drivers
 - Understand how they drive the design
 - First assessment of feasibility of other items
 - They may still need work in the baseline
- Hope that this can be done on a short timescale
- Then need to prepare the future work
 - Involve young people
 - But need supervision and guidance
 - And need some fast turnaround capabilities

Draft Work Breakdown Structure

- An attempt to make sure that we do not forget to cover the required work
- In CDR also need to cover subjects that are not challenging
 - To state exactly that they are not challenging
 - I expect it unlikely that there is something not challenging
- To be complemented with a critical issues list
 - To identify
 - design drivers
 - potential show stoppers
 - Performance issues
 - Cost issues
 - ...
 - To be able to make priorities
 - Cannot cover everything
 - But in a project a detail can be fatal
 - Have to define the scope of our CDR efforts

FCC-hh Draft Work Breakdown Structure I

Overall design parameters

Baseline layout

Baseline parameters

Baseline parameters for HE-LHC

Injector complex requirements and constraints

Physics requirements

Staging scenarios

Functional machine design

Beam dynamics and collective effects

Collimation concepts

Injection and extraction concepts and designs

Ion beam operation design considerations

Interaction region and final focus design

Lattice design and single particle dynamics

Machine detector integration

Machine protection, magnet protection, QPS, BLM concepts

Radiation effects

HE-LHC performance needs and conceptual design

FCC-hh Draft Work Breakdown Structure II

Technical systems

Technologies that require R&D

Beam diagnostics requirements and conceptual design

Beam transfer elements requirements and conceptual design

Collimation systems and absorber requirements and conceptual design

Control system requirements

Dump and stopper requirements and conceptual design

Element support and alignment requirements and conceptual design

Machine detector interface system needs and conceptual design

Machine protection system requirements and conceptual design

Normal magnet requirements and element conceptual design

Power converter requirements and conceptual design

Quench protection and stored energy management requirements and concepts

RF requirements and conceptual design

Superconducting magnet and cryostat requirements and conceptual design

Proximity cryogenics for superconducting magnets and RF

Vacuum system requirements and conceptual design

Shielding

Conclusion

- Please help by
 - signing up for the email lists
 - FCC-hh-design
 - FCC-hh-beamdynamics
 - FCC-hh-injectors
 - FCC-hh-technologies
 - reviewing and improving our parameters
 - helping to prepare choices for the baseline design
 - preparing the future collaboration