

Some Comments on Organisation and News

D. Schulte

Objective and Scope

Objective:

In time for the next European Strategy for Particle Physics Update, the study aims to establish whether the investment into a full CDR and a demonstrator is scientifically justified.

It will provide a baseline concept, well-supported performance expectations and assess the associated key risks as well as cost and power consumption drivers. It will also identify an R&D path to demonstrate the feasibility of the collider.

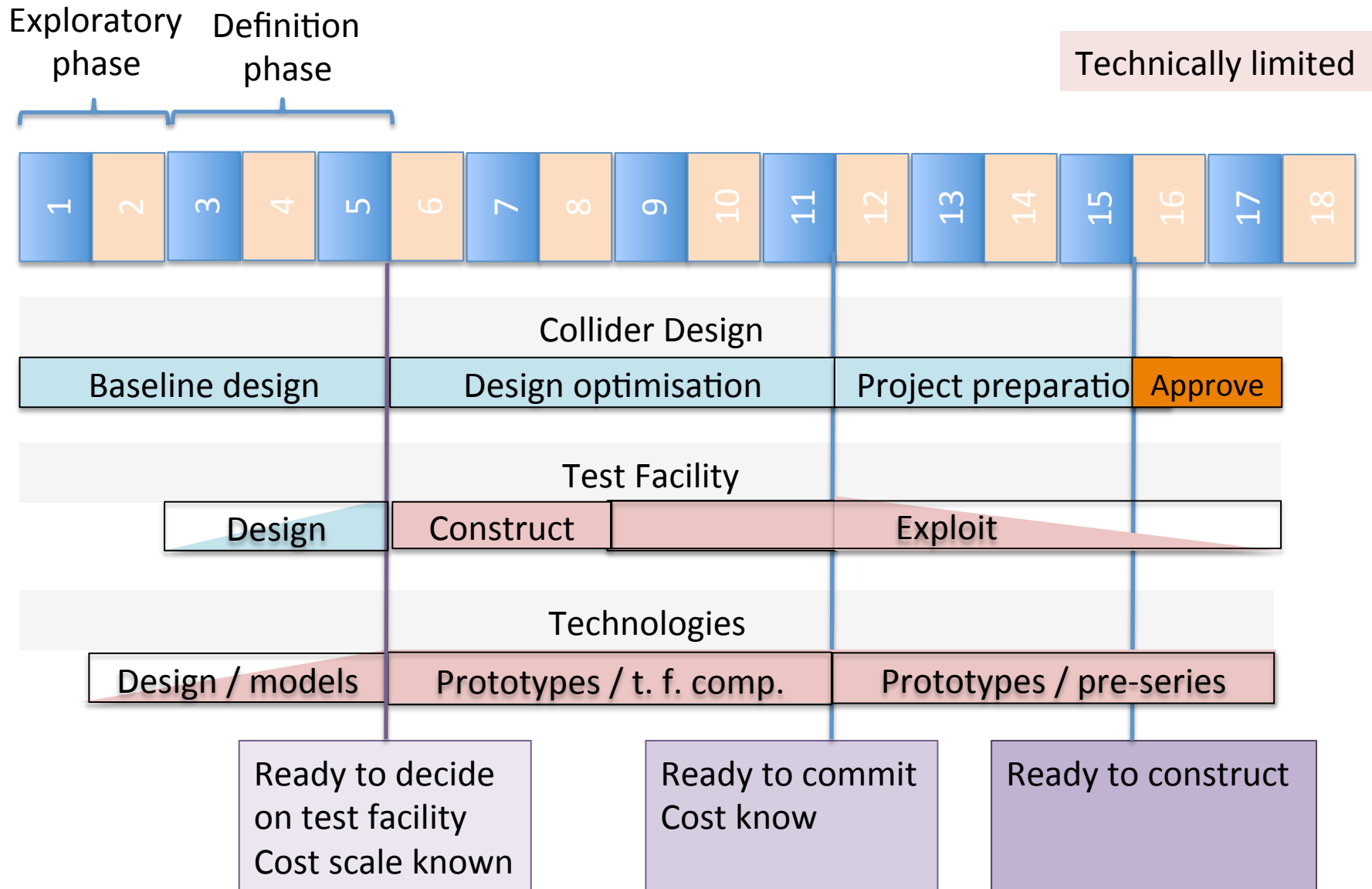
Deliverable:

Report assessing muon collider potential and describing R&D path to CDR

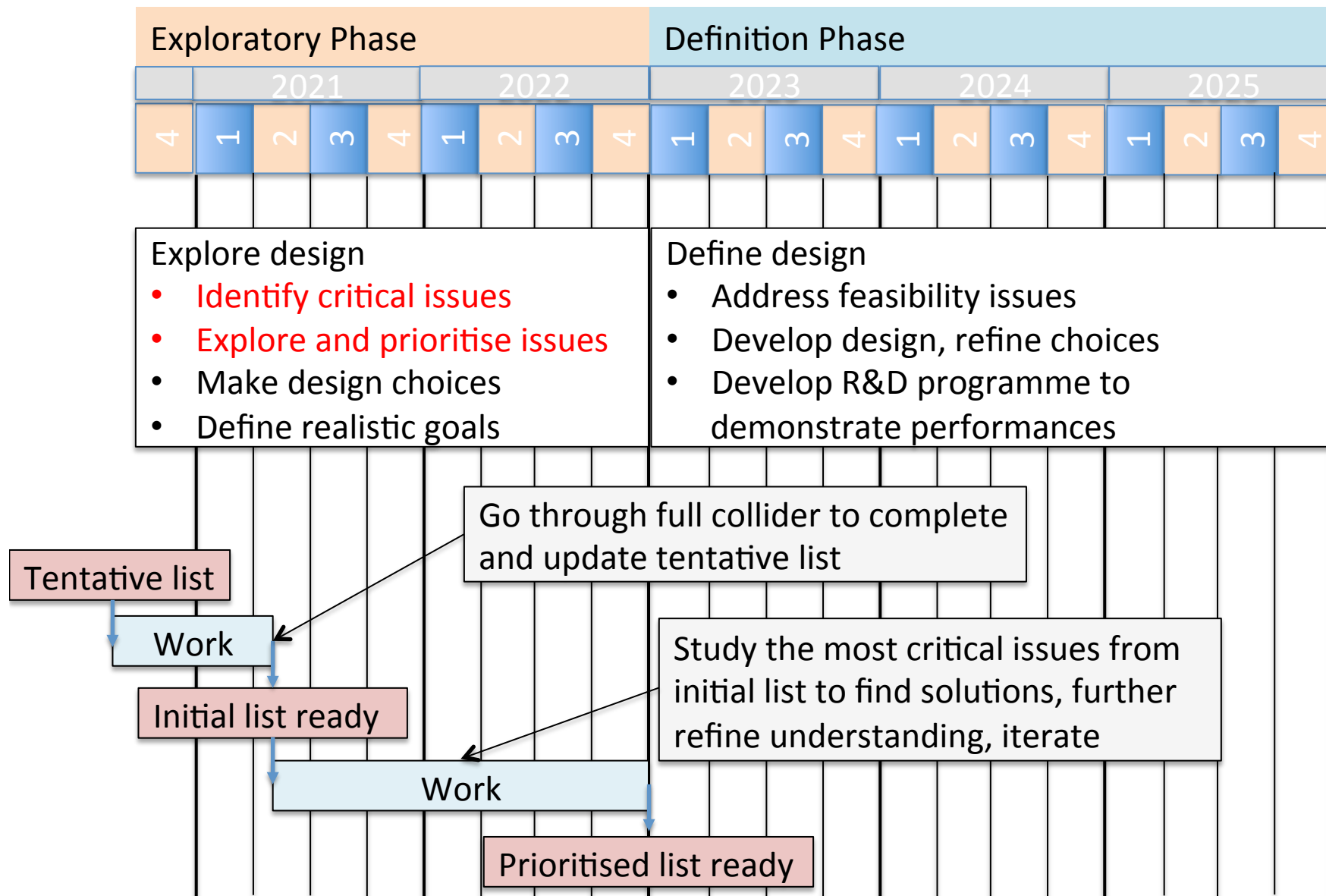
Scope:

- Focus on two energy ranges:
 - 3 TeV, if possible with technology ready for construction in 10-20 years
 - 10+ TeV, with more advanced technology
- Explore synergy with other options (neutrino/higgs factory)
- Define R&D path

Modified Timeline



Tentative Timeline



Note: Roadmap Development

Two European roadmaps are important

- Detector R&D
- Accelerator R&D

Should finish middle of next year

Progress on detector R&D roadmap organisation (ECFA)

- Several working groups for different technologies are being set up
- Have to ensure that we have a link into each of them

Accelerator roadmap process is still being defined (LDG)

- but we already started to go ahead

US Snowmass process is on similar timescale

- Use this for synergy, see Nadia's talk

Exploratory Phase – Key Topics

- Impact on the environment
 - The neutrino radiation and its impact on the site. This is known to require mitigation strategies for the highest energies.
 - Power consumption (accelerating RF, magnet systems, cooling)
- Mitigate the impact of machine induced background on the detector, as it might limit the physics reach.
- High-energy systems that might limit energy reach or performance
 - Acceleration systems, beam quality preservation, final focus
- High-quality beam production
 - Target and target area
 - Cooling, in particular final cooling stage that does not yet reach goal

Exploratory Phase – Key Topics

- Establish the physics case

Need to identify what can be done for physics

- Impact on the environment

- The neutrino radiation and it require mitigation strategies
- Power consumption (accelerating RF, magnet systems, cooling)

Need to identify what is required from detector and collider

- Mitigate the impact of machine induced background on the detector, as it might limit the physics reach.

- High-energy systems that might

- Acceleration systems, beam quality

Need to identify what has to be done

- detector technologies
- detector design
- software
- accelerator design

ce

- High-quality beam production

- Target and target area
- Cooling, in particular final cooling stage that does not yet reach goal

Physics and Detectors

- **Physics case** is instrumental for the muon collider
 - Start a working group, see Andrea's talk
- **Detector simulations** are crucial for machine-detector interface (MDI) studies
 - Dedicated working group, see Donatella's talk
- Agreed on **tentative DELPHES card** (in response to Snowmass request)
 - Tentative basis for physics studies already at Snowmass
 - Tentative goal for detector study
 - **Will be refined** as we learn more either on physics or the detector
 - Encourage studies of variations
 - Michele Selvaggi organised a discussion with Andrea, Donatella and Nadia and including FCC-hh and CLIC expertise (Werner Riegler, Ulrike Schnoor, ...) and provided card based on FCC-hh and CLIC
 - Andrea will present this

Initial Organisation: IRAP

“Interim R&D Advisory Panel”

The IRAP will work during the initial phase of the study. Its mandate is with the help of the collaboration to:

- Assess the physics potential
- Propose initial detector performance specifications based on physics needs and technological capabilities
- Establish a list of critical issues for the detector
- Suggest initial priorities and study scope for the identified critical issues

- Propose initial accelerator complex performance specifications
- Establish a list of critical issues for the accelerator complex
- Propose initial accelerator complex performance specifications

Need to coordinate with Roadmap definition processes

Mailing Lists

Dedicated mailing lists for specialised meetings

Please register for the mailing lists interesting for you

- Go to <http://e-groups.cern.ch/>
- Sign in with your institute (you find a list at the bottom of the sign-in page)
- Then search for “muoncollider”
- In the line “muoncollider-yourinterest” hit the subscribe button.

You can also unsubscribe in the same way (the button will be labeled “unsubscribe” if you are on the list).

Currently we have

- **physics-potential**
- **detector-simulations**
- Cooling complex
- high-energy complex
- Magnets
- RF
- Particle interaction with matter: target, shielding etc.

Will put up the other mailing lists