EDR Cryomodules: Down-Select Plan

H. Carter

Outline

- Cryomodules to Consider
- Status of Each Cryomodule
- Decision Timeline
- My Conclusion

A Good Reference

At the EDR ML CM & Cryogenic KOF, H. Hayano gave a nice talk titled:

"**Basic Strategy of Designing Cryomodule"**

"Consideration of plug-compatible design for cryomodule and cavity unit"

This talk can be found at:

http://ilcagenda.linearcollider.org/conferenceDisplay.py?confId=1854

Cryomodules to Consider

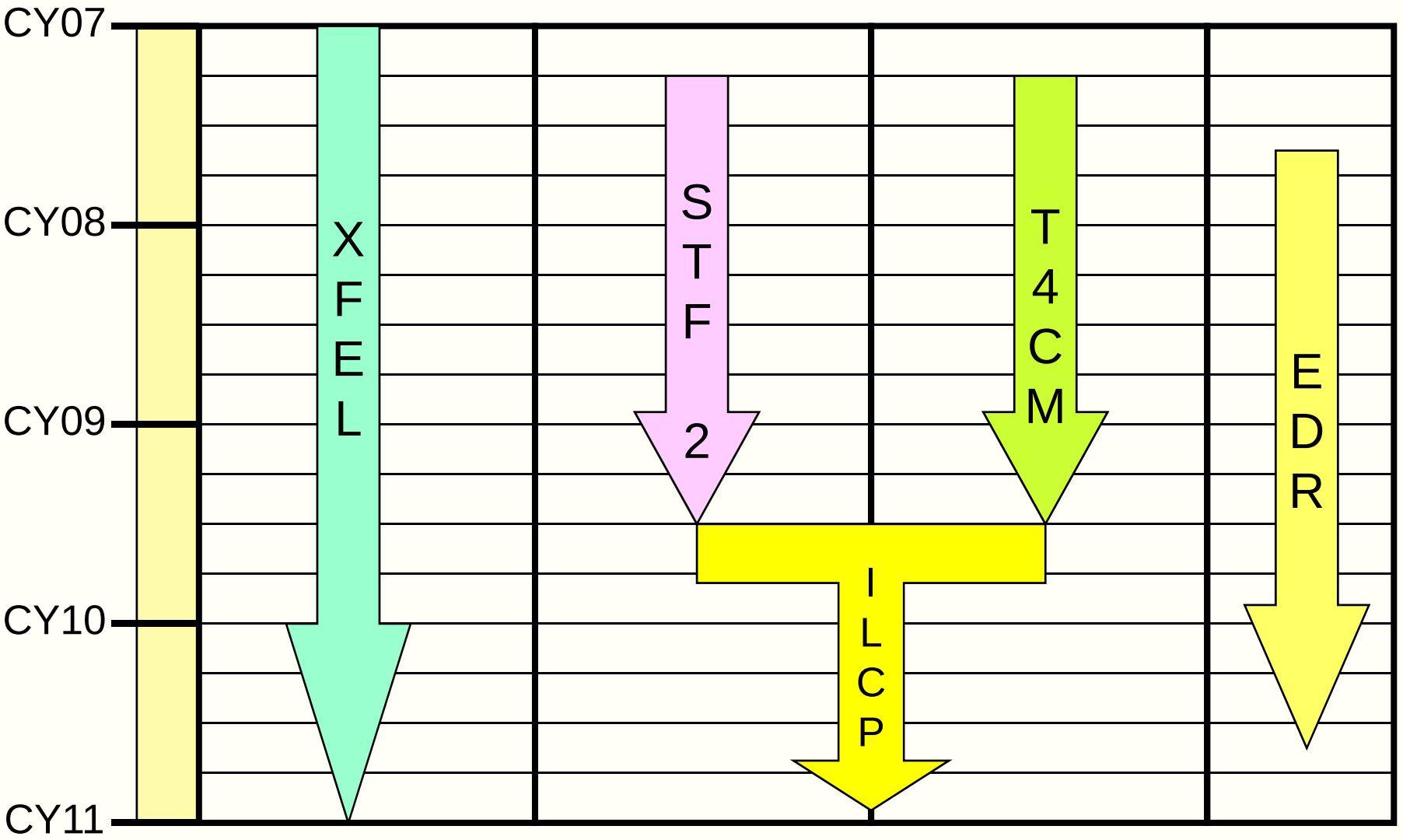
- BCD Cryomodule: TTF Type 3+
- XFEL Cryomodule: TTF Type 3+
- RDR Cryomodule: Type IV cryomodule
- EDR Cryomodule: Type IV? STF-2? XFEL?
- ILC Prototype Cryomodule: Type V?

Note: No radical departure from the basic TTF Type 3 CM is under serious consideration at this time.

Status of Cryomodules Under Consideration

- **Type 3+ CM:**
  - Selected design for the XFEL
  - Based on mature TTF Type 3 CM design
    - Three Type 3 CMs have been built and operated at TTF
  - None has been constructed and operated at DESY yet; first one for TTF/Flash will be CM8 (CM6 was close to a Type 3+)
  - FNAL CM1 will be first Type 3+ completed
- **Type IV CM:**
  - Based on TTF Type 3+ design
  - Design is ongoing---80% complete
  - 1st T4CM to be completed at FNAL in FY09
- **STF-2:**
  - Design incorporates many TTF Type 3+ design features

CM Down-Select Timeline



Conclusion

- **The down-select process for cryomodules should be straight forward---the cavity down-select process, on the other hand, will not be that simple**
  - **Why? Cryomodule design is relatively simple, once you remove the "high tech" components (dressed cavities)**
    - **We will choose the best features from the different regional designs to incorporate in the ILC Prototype**
    - **A parametric model can be used to explore the "ripple effect" associated with the incorporation of these "best features". The T4CM is such a model.**
    - **As industrial construction experience develops in the three regions, the designs will incorporate**
      - **Value engineering**
      - **Design for manufacture**
      - **Cost reduction**