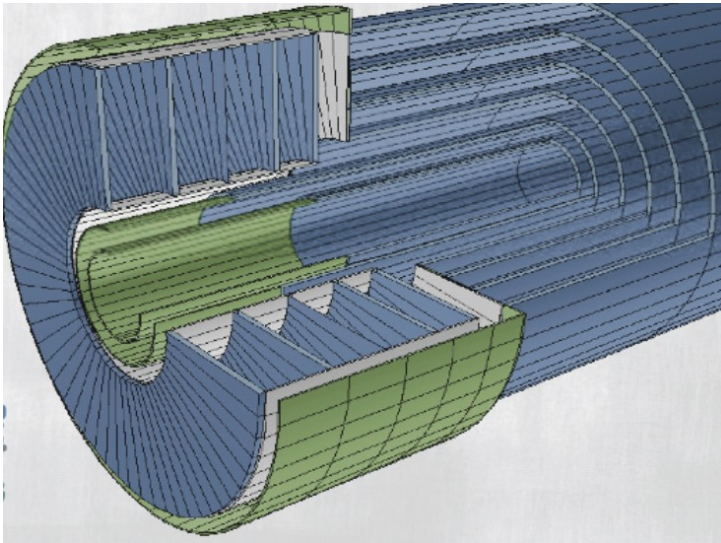


CMS Phase II Tracker

The CMS Phase II tracker project – concept and timelines



- LHC Schedule
- Phase II Tracker Schedule
- Work Breakdown Structure
- Upcoming dates

Günter Eckerlin

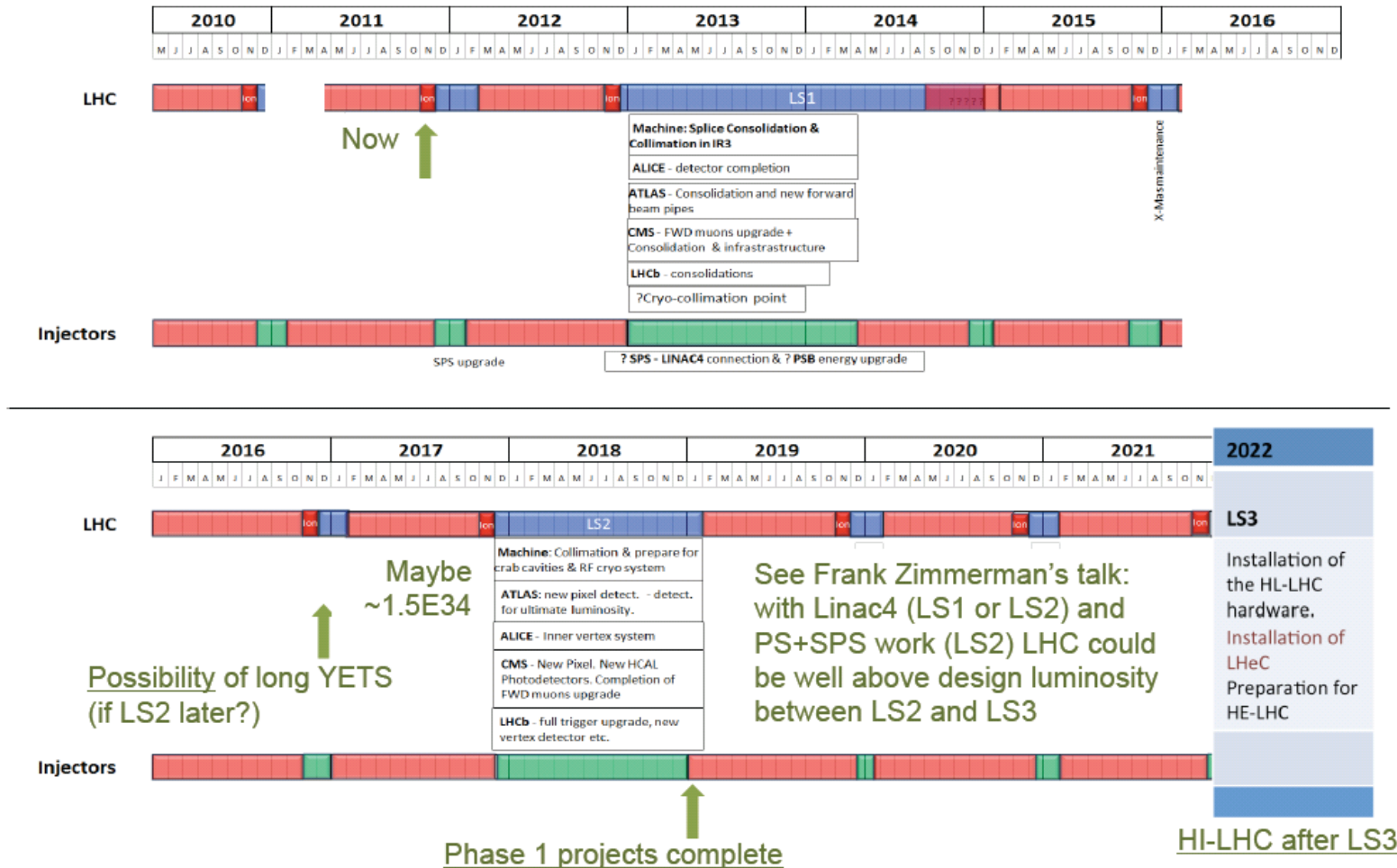
DESY-CMS Upgrade Meeting

20. December 2011

Longer Term Planning – Sept LHCC

New rough draft 10 year plan

Not yet approved!



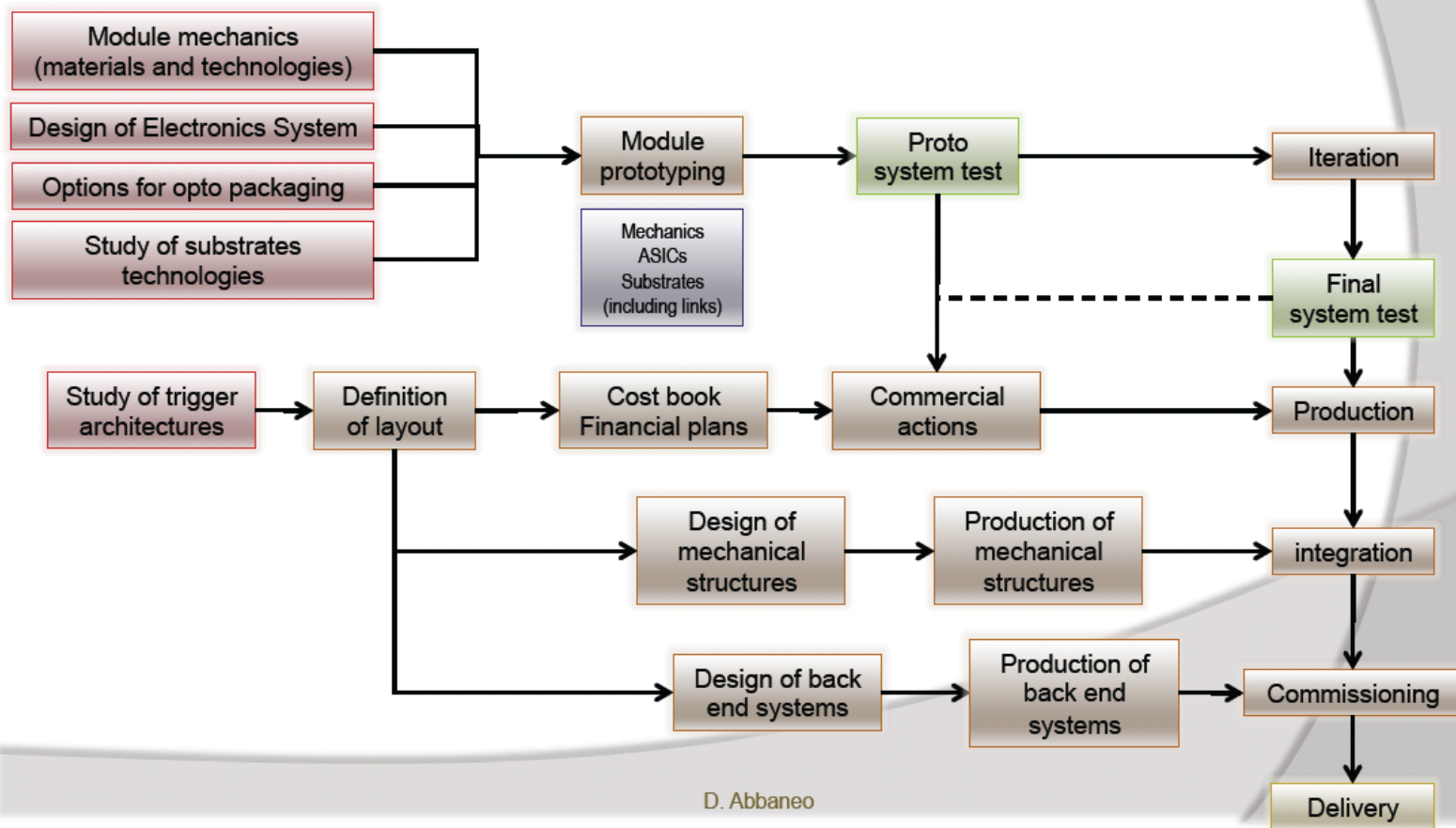
NOVEMBER 2011

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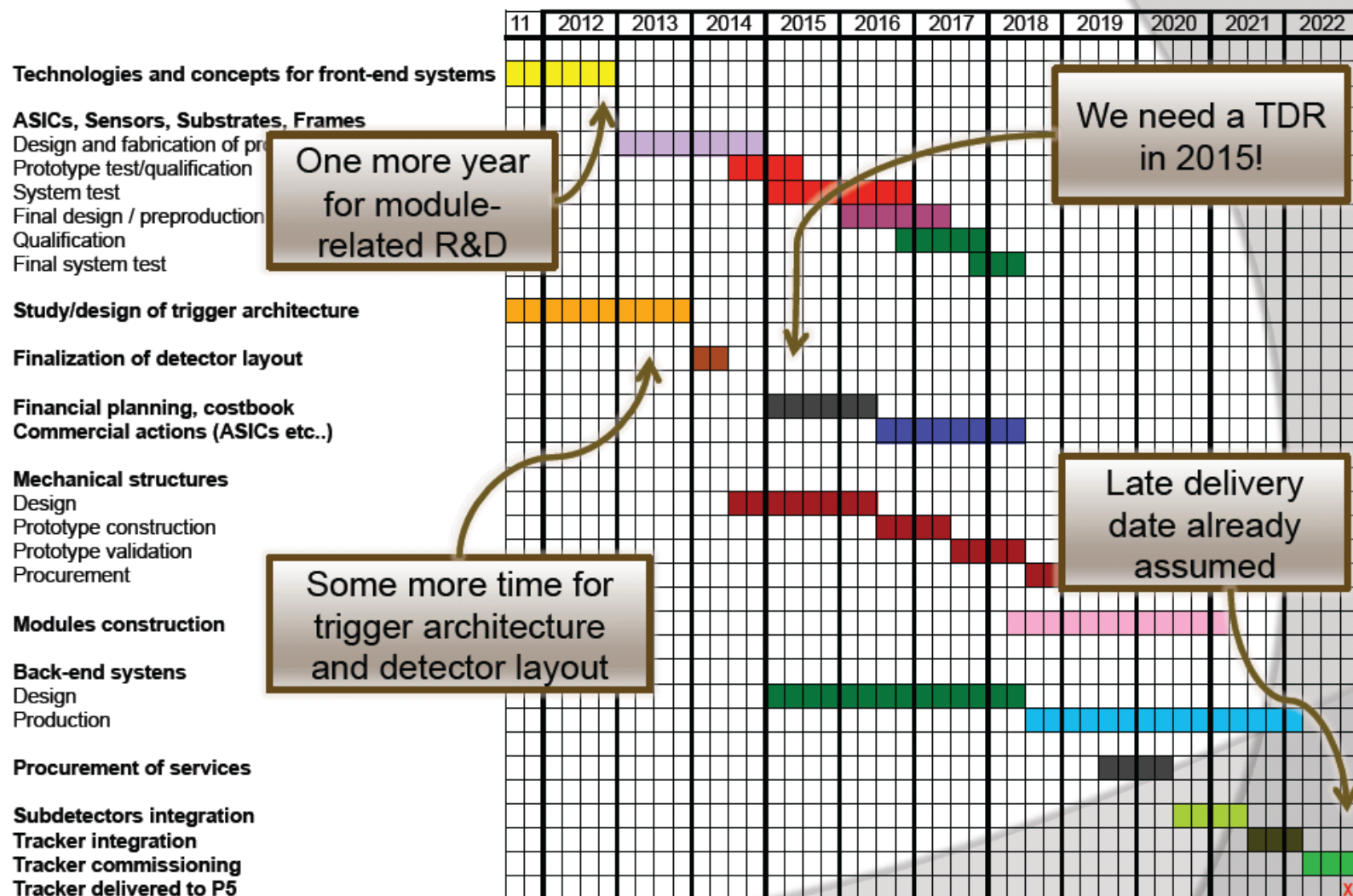


Schedule

- Concept discussed in TK Upgrade Steering Committee
 - And presented in several Tracker meetings



Simplified excel version



D. Abbaneo

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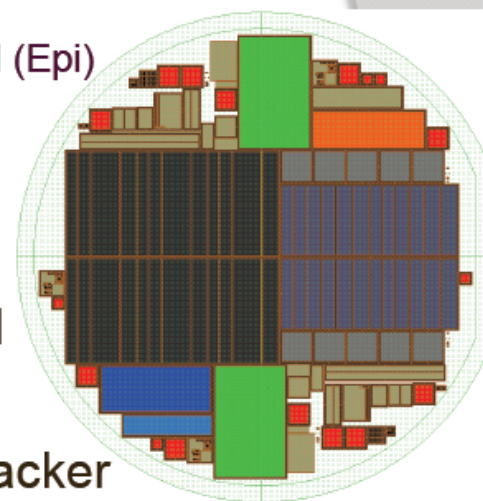
Sensors: status and outlook

➤ HPK project

- ⊙ Different materials
 - ★ Float-zone (FZ), Magnetic Czochralski (MCz), Epitaxial (Epi)
- ⊙ Different thicknesses and technologies
 - ★ n-bulk, p-bulk with p-spray and p-stop isolation
 - ★ Wafers with 2nd metal layer
- ⊙ Several strip and pixel geometries
- ⊙ 6 wafers of each material; 158 wafers in total

➤ Main goals:

- ⊙ Choose material and technology for outer Tracker Upgrade
 - ★ And then move on to sensor prototyping
- ⊙ Provide a solid baseline in planar technology for pixel phase-2 upgrade
 - ★ To be compared with more radically different technologies



Conclusions - I

- Outer Tracker Upgrade R&D well underway
- Sensors R&D progressing very well
- Substantial effort on module Front-End Electronics
 - ⊙ And it is the critical issue at this point
- Promising concepts for modules with p_T filtering are in hand
- Work on 3d modelling of modules and structures underway
 - ⊙ To be boosted and focused in the next year
- Flexible software tools for overall detector modelling and evaluation are in hand
 - ⊙ New useful features keep been added
- Trigger architecture (possibly) linked to detector layout
 - ⊙ One developed concept based on long-barrel double-stack geometry
 - ★ Hierarchical stub → tracklet → tracks processing
 - ⊙ Work started on Associative Memories

D. Abbaneo

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Upcoming dates

CMS Upgrade Weeks

21. May

develop WBS for R&D and design phase

29. October

Technical Proposal ~ 2013/14

TDR ~ 2015

