

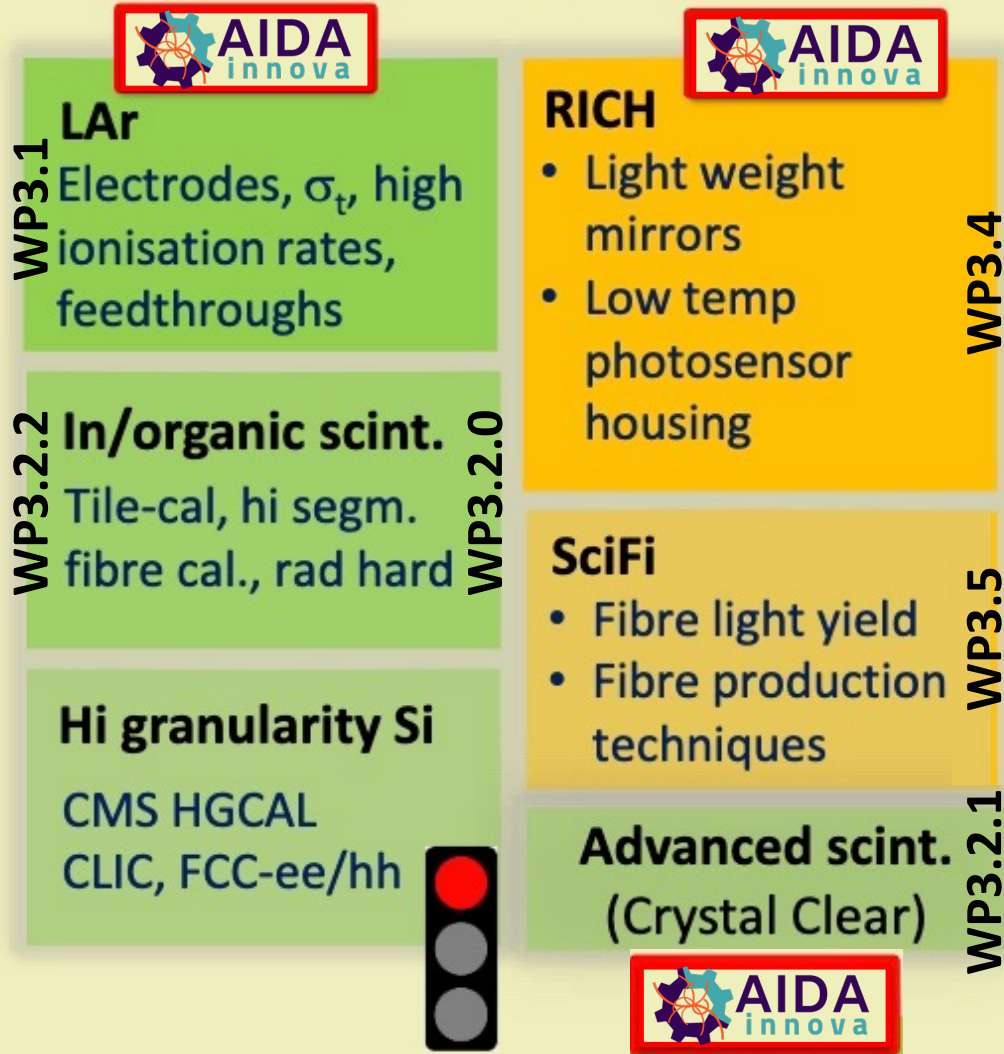


EP R&D WP3 – Summary

P. Roloff & M. Aleksa for EP R&D WP3

Sub-Workpackages – Current Status

WP3: Calorimetry + Light based



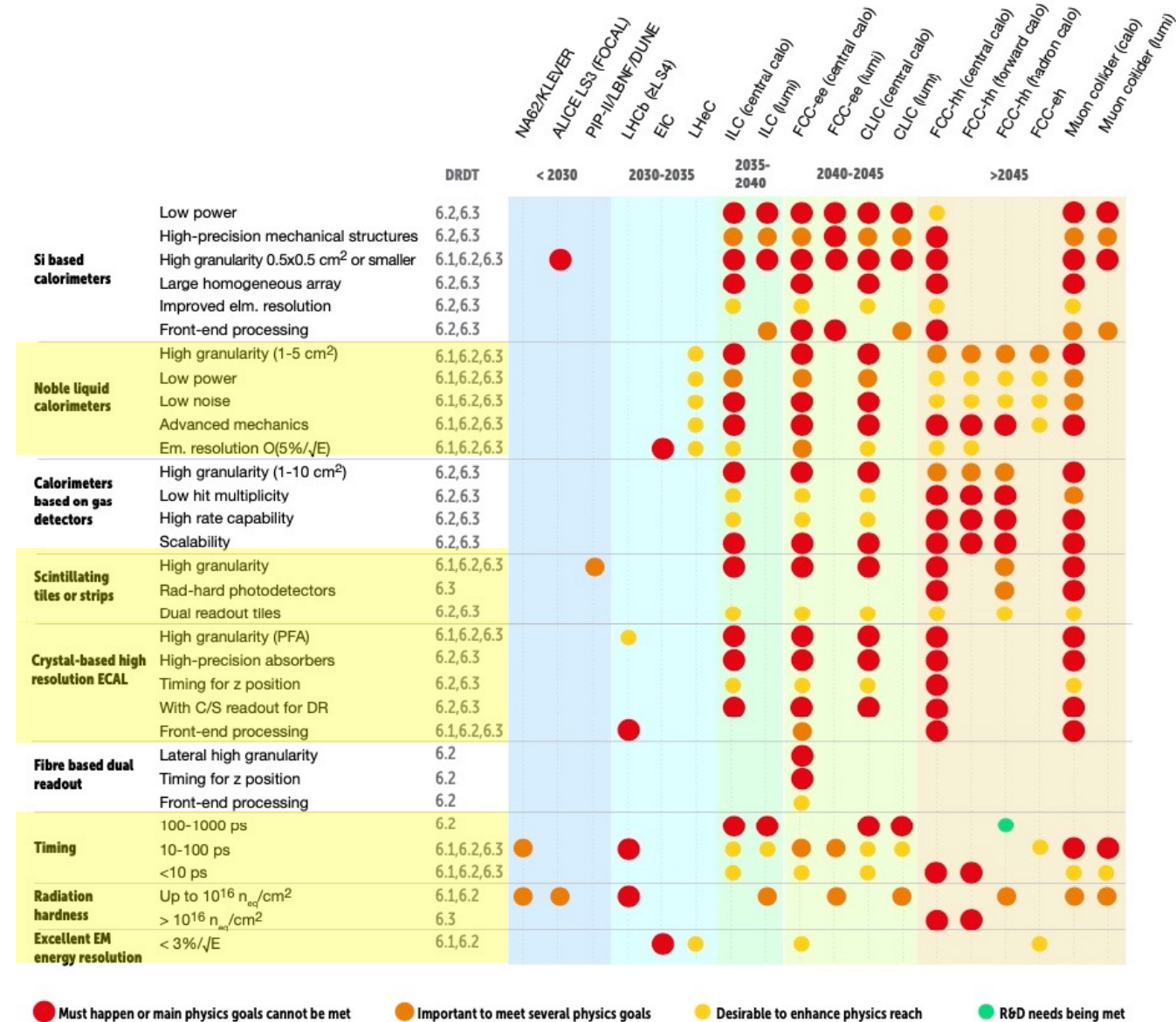
- **WP3.1: Noble-Liquid Calorimetry (talk by B. François)**
 - 1 fellow since Sept. 2020 – Jan. 2023, new fellow starting May 2023: Read-out electrodes, electronics, performance
 - 1 summer student 2021
 - 1 PhD student (Gentner programme) since Dec. 2022
 - 1 fellow (shared with cryolab) March 2020 – March 2022: Feedthroughs
 - 1 fellow (shared with FCC) since Sept. 2022: Absorbers, test-module design
 - International collaboration ~6 institutes, supported by AIDAInnova
- **WP3.2: Scintillator-Based Calorimetry (talk by P. Roloff)**
 - 1 fellow since 2020: SPACAL R&D
 - 1 student since 2019: WP3.2.1: Crystal Clear
 - 1 fellow (shared with ATLAS) starting 2022: FCC HCAL R&D – Sci/Pb/Steel TileCal
 - 1 student (based at CERN, but paid by LIP): FCC HCAL R&D
 - International collaboration (LHCb, Crystal Clear), synergy with AidaInnova and quantum initiative
- **Topics of WP 3.1 and 3.2 match the emerging DRD collaboration on calorimetry**
- **WP3.4: RICH (talk by F. Keizer)**
 - 1 fellow (shared with LHCb) since 2021: LHCb RICH Upgrade R&D
 - Supported by AIDAInnova
- **WP3.5: High Light Yield Scintill. Fibres (talk by S. Jakobsen)**

Extension Requests WP3

- **2024:**
 - Currently accepted budget for 2024: 135kCHF + 3.0 fellows = 435kCHF
 - New proposal for 2024 (2nd iteration): 208kCHF + 3.5 fellows + 2 doct = 658kCHF (+223kCHF)
- **2025-2028:**
 - Latest request (second iteration): 1937kCHF + 19 fellow-years + 8 doct-years = 4237kCHF
 - This is a reduction of -1070kCHF with respect to the original request (-20.2%)
- Extension requests will be discussed in the individual presentations per sub-workpackage

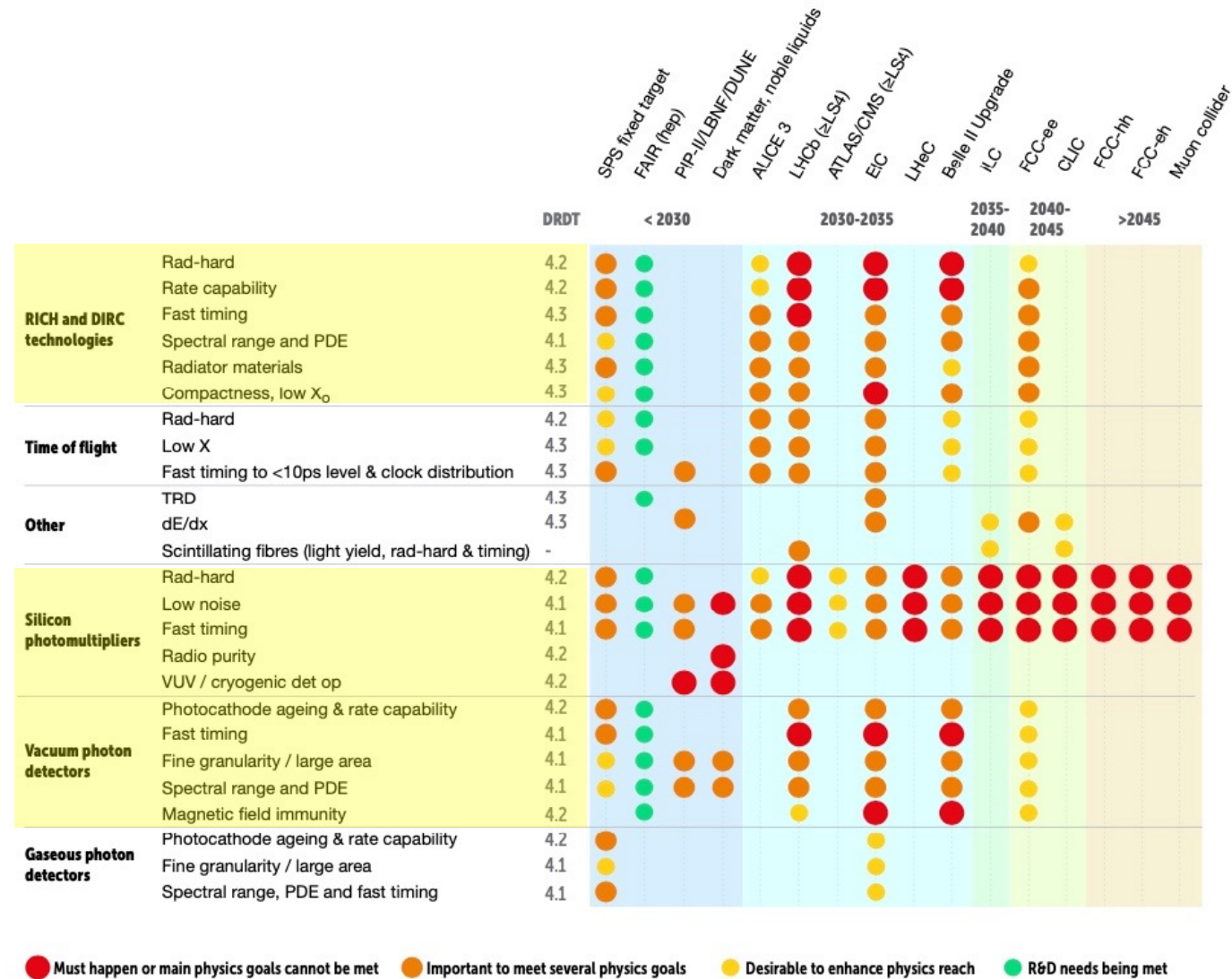
WP3.1, WP3.2, WP3.2.1 – ECFA Roadmap

- **WP3.1** fully in line with all R&D goals on
 - Noble-liquid calorimeters
 - Radiation hardness
 - Timing (10 – 100ps)
 - **WP3.2.0, WP3.2.1 and WP3.2.2** fully in line with R&D goals on
 - Scintillating tiles or strips
 - Crystal-based high resolution ECAL
 - Radiation hardness
 - Timing
 - Excellent EM energy resolution
- NB: photon detectors also crucial
→ see next slide



WP3.4, WP3.5 – ECFA Roadmap

- **WP3.4** fully in line with all R&D goals on
 - **RICH Technologies:**
 - New green-gas radiators
 - Low Xo mechanics and optics
 - Rad-hard, rate and time capabilities
 - Green-enhanced photo-sensors
 - Timing (10 – 100ps)
 - **SiPMs and Vacuum Photo-Detectors**
 - Cryogenic detector operation for low noise and rad. Hard. (SiPMs)
 - Green-enhanced photo-sensors
 - Timing
 - High PDE
 - Rad. hardness and ageing
 - **New RICH Detector Designs and Concepts**
- **WP3.5**
 - **Novel High Light Yield Scintillating Fibers**



This session

13:40

WP 3 - Calorimetry and light based detectors

🕒 40m

Introduction

🕒 5m

Speaker: Philipp Roloff (CERN)

WG3.1

🕒 10m

Speaker: Brieuc Francois (CERN)

WG3.2

🕒 10m

Speaker: Philipp Roloff (CERN)

WG3.4

🕒 10m

Speaker: Floris Keizer (CERN)

WG3.5

🕒 5m

Speaker: Sune Jakobsen (CERN)