

The Process

- Goals and guidelines
- Time line
- Preliminary list of R&D themes
- External teams

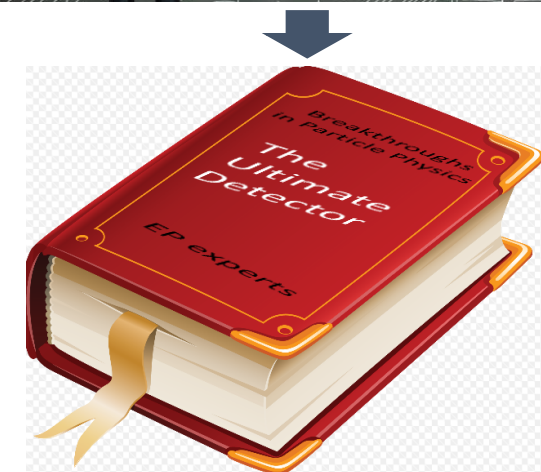


Our goals

In one year from now we should ...

- have defined a convincing and ambitious **R&D programme over 5 years**, which covers the most relevant technologies for the years >2025.
 - break down in **work packages**
 - work plan with **deliverables, milestones**
 - resources needs (CHF and FTE)
 - risks, fall backs, alternatives
- have written a **comprehensive report**, describing
 - context and motivation
 - state of the art
 - main challenges
 - proposed R&D (as above)
 - outlook on further future
 - some ideas on management & reporting

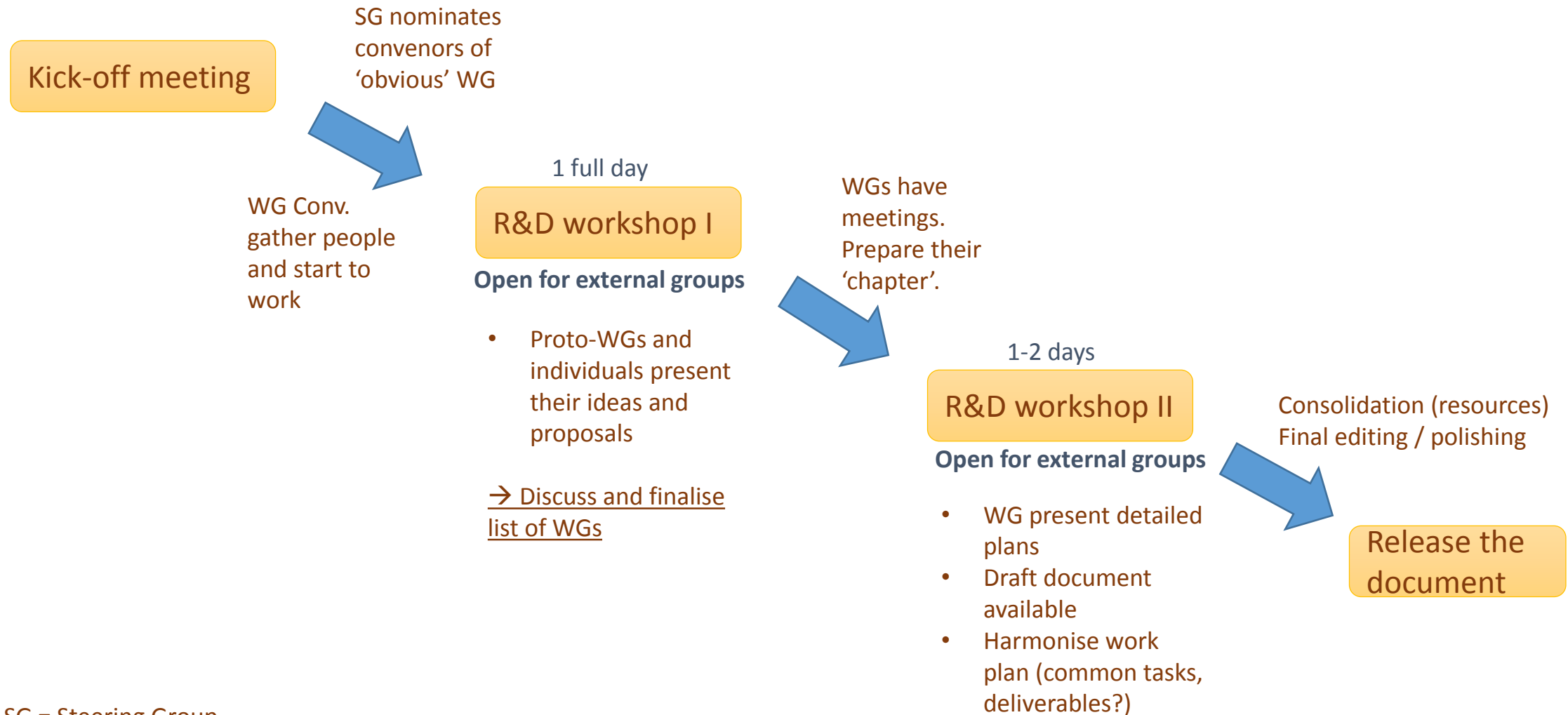
100+ pages ?



Some guidelines

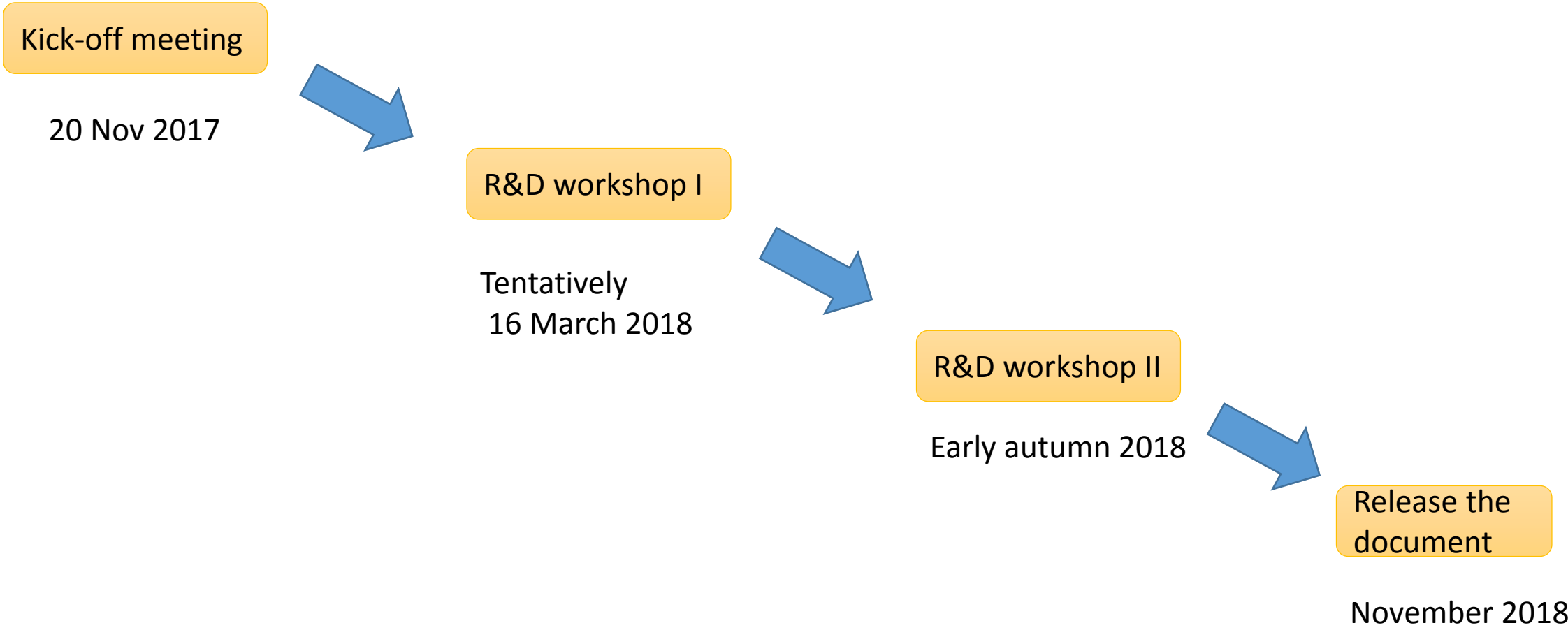
- Some R&D themes are very obvious, others require discussions and prioritising (the resources will be limited)
- Process should be 'bottom-up' – you are the experts ! – but some steering is needed
- Important: we don't want to miss clever non-conventional ideas
- We are defining an EP R&D programme, but we welcome and encourage the participation of external teams (see below)

The process



SG = Steering Group
WG = Working Group

Time line



The steering group's prel. list of R&D themes

Silicon Detectors:	Integrated CMOS, LGAD, packaging and high density interconnect (chip-to-chip, wafer-to-wafer), tilable solutions
Gas Detectors:	Micro pattern detectors, solutions for large areas, fast detectors, environment friendly gases, technology transfer to industry
Calorimetry:	Radiation hard technologies, timing ... ? How much EP involvement do / will we have ?
Detector Integration:	Low-mass structures, cooling, microfabrication, composite technologies, robotics, precision metrology and alignment
IC Technologies:	Hybrid pixel detectors, increased functionalities on chips, very deep submicron technologies, radiation hardness
High speed Links:	Radiation hardness, power dissipation, silicon photonics, wireless solutions
Software for Experiments:	New techniques for simulation and reconstruction, customizable turn-key systems, new HW/SW technologies
Detector Magnets:	Thin magnet technology?

We see potential for cooperation between the work packages. E.g. joint deliverables, common test beams, ...

Collaboration of external teams

- The program aims to support R&D activities in which EP teams play a major role.
- These activities shall fit in the global context. Cooperation with external teams is welcome, often essential.
- R&D collaborations, like RD50 and RD51, stimulate a huge resonance in the community, initiate and boost developments and foster communication and cooperation. They are LHCC reviewed.
- We expect that certain tasks of the new R&D program will be carried out (by EP personnel) inside these R&D collaborations. External teams may join in and in this way strengthen our program.