Proposal wrt R&D activities

Geant4 Online Collaboration Meeting
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Plenary Session 2
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R&D structure

- Rapid ongoing hardware evolution + high throughput demand by HL-LHC → new challenges
  - **Exploratory R&D projects needed, significantly risky**

- Constraints for structuring the R&D vs incremental improvement activities:
  - Recognition of developers work for their activity during the risky/exploratory phase
  - Without being disruptive with the developers' work serving the production version
- Creation of a new R&D Working Group ?
  - Number of representatives at Steering Board is f(number of members)
  - Risk of tension between promoting R&D and incremental development & maintenance
  - Risk of conflict of interest with projects defended at the SB by representatives
- **Long-term / perpetual R&D Task Force solution preferred**
  - TF chair has permanent seat at Steering Board
    - Reports about projects progresses
  - + invitation of developers to the Steering Board when needed
  - External contributors, free of Geant4 duties, welcome to the R&D Task Force
  - More flexibility of the TF and better guarantee of freedom for Geant4 to assess R&D activities
- Proposed to increase visibility of R&D activities:
  - Advertising the R&D program of work for the year
  - Including a summary of the R&D activities in relevant public presentations

R&D participants

- Rely on the **"contributors" class to articulate R&D and production version activities**
  - Keep considering as **"member"** someone delivering code (even if R&D-like, e.g. tasking, G4HepEm) to the production version or planning to do so in the short terms

- **Exploratory R&D initiatives from Geant4 members**
  - Accounted as Collaboration contribution, as incentive to invest on R&Ds
  - Initiatives welcome
    - provided they are compatible with the involvement needed for the production version
  - **Time on R&D(s) accounted for to the R&D Task Force**
  - **Respective times on WG(s) and on R&D Task Force declared at annual census**

- **Exploratory R&D originated by externals (i.e. not Geant4 members):**
  - They **can become Geant4 "contributor"**, if they wish so;
  - They are invited to declare their expected effort on R&D to the R&D Task Force
  - If R&D leads to sizeable exploitable features, contributor(s) asked to **join the Collaboration**
    - To participate in the planning of integration, related development, maintenance and support

R&D activities

- Any new sensible proposal is granted the status of **"recognized R&D activity"** by the Steering Board :
  - **No initial definite acceptance nor refusal of such proposals** because
  - Any sensible project should be given the **opportunity to demonstrate its potential**
  - The Collaboration does **not necessarily have the competence to judge the relevance** of a new R&D project
  - An opinion expressed at the **beginning** by Geant4 could be taken as a **funding criteria by funding agencies**
    - **Would put a huge responsibility on the Collaboration ! This is not our role !**

- Each "recognized R&D activity" is invited to declare its expected work items for each year
  - Work items for all the activities will constitute the plan of work of the R&D Task Force
  - Plan publicized and accessible from the Geant4 web pages.
- Every year, the **Steering Board assesses the "recognized R&D activities"**
  - provides feedback and suggestions on how to proceed
  - Assessment done directly by the SB, or by appointing a team of experts, within or outside the Collaboration
- **A project could remain active with "recognized" status for unlimited time**
  - In case of no progress or evidence that the approach appears as dead-end, its status will be revoked under the decision of the Steering Board.

- **In case a project leads, partly or fully, to exploitable features, these features will be integrated into the production version.**

Discussion time !