



Updates  
on requirements/items  
from previous TF meetings

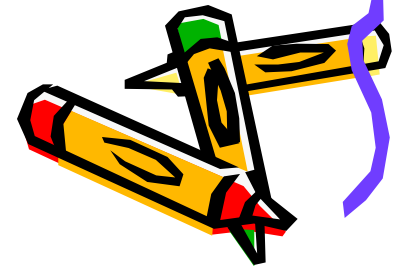
Geant4 Technical Forum  
February 5<sup>th</sup>, 2004

Makoto Asai (SLAC)  
on behalf of Geant4 collaboration

# Req.0101 : Access to the Track properties before hadronic processes are invoked

Responsible: H. Kurashige, H.P. Wellisch

- The solution proposed is to add a new user hook in the hadronics processes to enable the user to inspect the final state for the hadronic processes.
- Design iteration to enable the placement of such a hook implies removal of ParticleChange and G4Track from hadronics except for level 1 framework. This was done in 6.0.
- The user hook is to be seen in the context of new needs of CMS for monitoring, and interests to do microscopic NIEL calculations. The requirement will be closed in the next minor release.



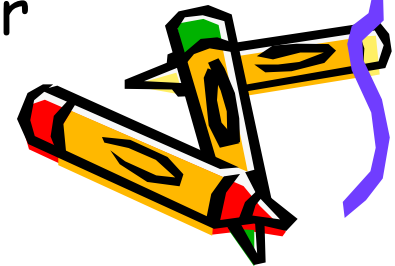
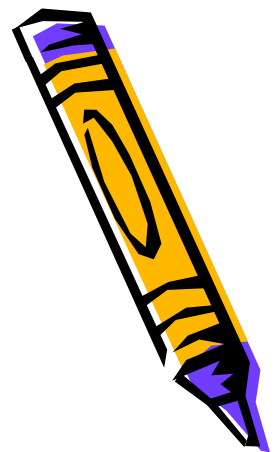
# Req.0103 : Geometry construction

## - input from external models

Responsible: G. Cosmo

Two aspects of this 'multi-request' are under consideration

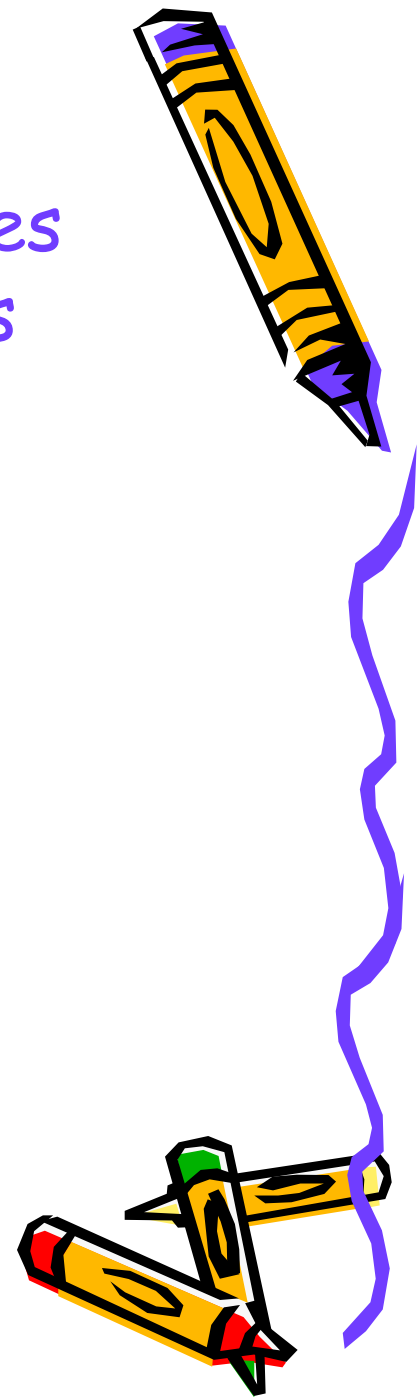
- to receive targeted resources from partners and,
  - if so, would be added to the 2004 work plan
- GDML:
  - adding output capability
  - including it as an I/O persistency module
  - extensions to data model
- CAD interface:
  - in the process of identifying objectives for
    - BREPs extensions
    - interface to CAD



Req.0106 : Setup statistical test suites  
for most sensitive physics quantities

Responsible: J. Apostolakis

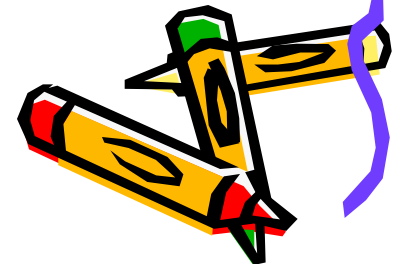
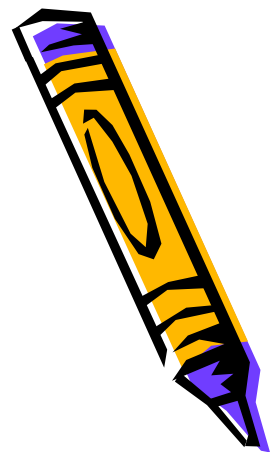
- JA to comment on 2004 activities



## Req.0107 : Installation kit which contains all packages

Responsible: G. Cosmo / G. Folger

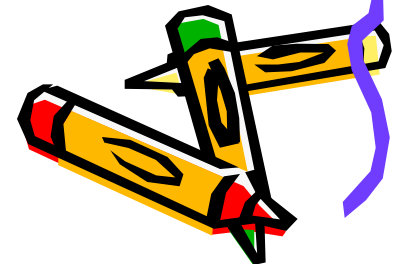
- We could offer it on a best-effort basis
  - as many customers require only current systems
  - new packaging will require additional effort to maintain, document, etc.
- For example, at the moment SLAC is maintaining an installation kit for Linux and Windows  
<http://geant4.slac.stanford.edu/g4cd/>



# Req.0201 : Killing the primary in (electron) Bremsstrahlung

Responsible: V. Ivantchenko

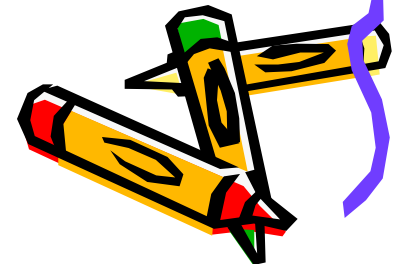
- Concrete process for this purpose has been provided to the requestor.
  - this can be seen as prototype in case of other users with the same requirement.
- For potential 'general case', an example (TestEm1) includes the implementation class.



## Req.0202 : Abstraction of geometry navigation / modeling

Responsible: G. Cosmo

- First version of abstract G4Navigator provided in Geant4 6.0
  - first simplification/consolidation of interface
  - virtual methods for key functions
- Further requirements awaited (A. Gheata)



Req.0203 : Pre-defined decay products

Req.0204 : User-defined MC truth

Req.0205 : Maintaining event generator information

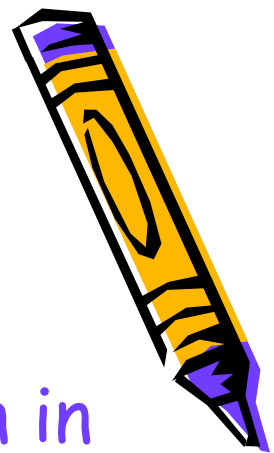
Req.0207 : Depositing additional information in calorimeter hit

Responsible: M. Asai

- All of required functionalities have already been released with Geant4 6.0.
- A sample code had been distributed to the users who requested these requirements and who expressed interests.

<http://www.slac.stanford.edu/~asai/NLD1.tar.gz>

- A new example (exampleN08) derived from this sample code is under construction and it is expected to be released with the next public release.

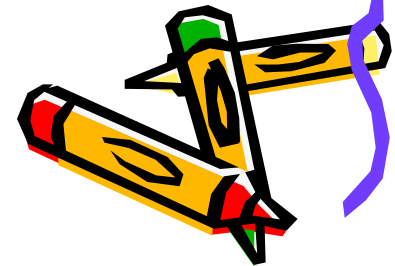
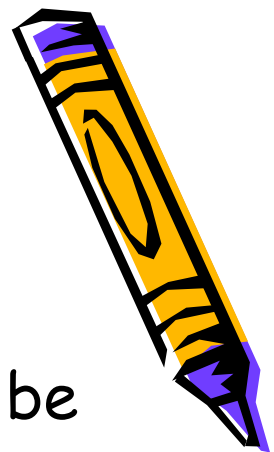




# Req.0206 : Physics modeling options and consistency

Responsible H.P. Wellisch

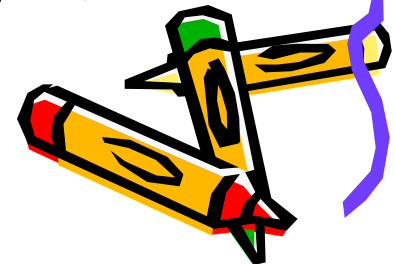
- New set of physics lists based on Geant4 6.0 will be available by the end of March 2004.
- If time permits, at that time the steering of the tailoring will be (optionally) independent of the G4UI (CMS request).



# Req.0208 : Enhanced saving and restoring of selected processes' cross-section tables

Responsible: M. Asai, H. Kurashige

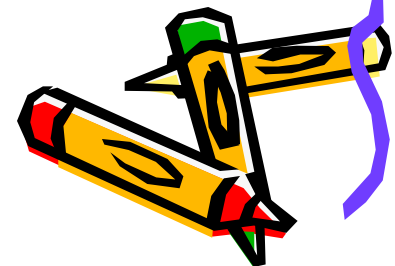
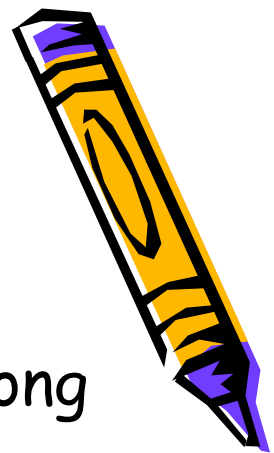
- Some enhanced verboisities have already been released with Geant4 6.0.
- Some aspects are identified as candidate working items for 2004, including:
  - Reshuffling of the order of materials/cuts is now implemented and to be included in February reference tag.
- Some functionalities require in-depth study, and possibly significant resources.



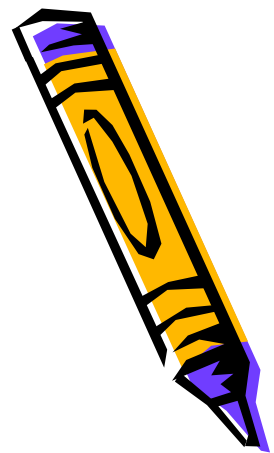
# Req.0209 : Physics lists capabilities and choices

Responsible: H.P. Wellisch

- Since Geant4 6.0, physics lists are distributed along the public release.
- The physics lists will continue to be distributed in major geant4 releases.
  - Release notes were included in the last physics lists update and will be part of the 'standard' maintenance process.
- A physics list, when it is created, will print
  - information as to what physics is included,
    - it will be in the next revision
  - what use-cases it can be used for
    - it will be done once maintenance concerns for correctness are resolved.

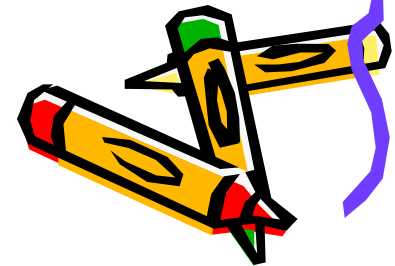


# Req.0210 : Correction of known problems



Responsible: J. Apostolakis

- Agreement was reached at the previous meeting
  - to address open issues, to the degree possible.



## Req.0211 : Geant4 release type and frequency

Responsible: J. Apostolakis / G. Cosmo

- The proposal was discussed only briefly at last meeting, by common agreement. An explanation of current practice was made.
- G4 is requested early communication of major change requests.
- No further action is currently foreseen.

