Paso: Provisional Analysis Skeleton for OO-ATLAS

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In a FRAMEWORK, you do what you are told,
and it’s a black box.

In a SKELETON, you do what you like,
but the skeleton may help you.

Analysis skeleton or framework:

What exists now (or very soon)?
Where can I plug in my code?
What functionality do we need?

Paso has ~ 6 month time span.
Then, replace with ATF official line.
Mustn’t trespass on their (design) space.

Paso:
One-day adaptation of testEvent/getGraphicsEvent.

Light framework with a traditional execution path:

Initialization:	in module constructors
Event loop:	a single ‘for’ statement
Termination:	in module destructors

What modules?

Data access	RDS packages Event, InnerDetector (etc) produce digis, detector descriptors
Visualization	Existing graphics packages, maybe others (PERSINT, HEPVis)

Reconstruction: (soon)TRT_Rec
(not yet) IPatRec, Xkalman(?)

Your module!

What other features does/can Paso have?

Scripting: no plans; short life product
GUI: no plans; short life product
(NB Aravis has its own user interface)
Parameters (“datacards”): simple facility coming, vaguely like FFREAD

How to use Paso for MyModule

(1) Check out offline/Applications/Paso into your SRT build area

(2) Add MyModule.h to the Paso subdirectory, and
MyModule.cxx to the src subdirectory

(3) Edit paso.cxx to put a call to your constructor in the initialization section, to what method you like in the event loop and to your destructor in the termination section

(4) Start gmake and go for a coffee

Data Ids and Ranges

A detector element is the smallest piece (e.g a Si wafer).

The Event package assigns a unique ID to each element, a set of integers identifying a path through the detector hierarchy. For example, the numerical equivalent of
SCT/barrel/layer 1/ring 2/phi-sector 7/parity 0 is an element.

You can also designate a node, such as the whole of SCT/barrel/layer 1, or a Range ID1-ID2, or a vector of Ranges, to select any combination of detector elements.

Then you can have the Event package unpack those elements and their digis. In your module you can use the Range mechanism again to access those detector descriptions and digis, or some subset of them, using an Iterator.

GRAPHICS

Paso uses the standard ATLAS graphics packages. Any ‘Plottable’ can be displayed on any ‘Scene’.

The scenes are not only pictures on Atlantis, Wired, Aravis and any VRML browser, but also HTL histos and HBTuples.

[Currently some LHC++ problems].

Reps

Each Plottable/Scene combination needs a rep. Currently making Aravis subdetector reps from DetectorDescription packages. Throws up some problems.