

# Overview of software activities

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[XI FOOT Collaboration Meeting](#)



# The last months..

- ➔ .. have been (again) really busy ! Developments driven by GSI beam time
  - Implementation of the MSD into shoe (decoding, clustering, tracking) with all interfaces (pedestal, calibration, event display)
  - Standard output for global tracks for TOE ***and*** GenFit (and *TAGactNtuGlbTrackS* action)
    - *TAGntuGlbTrack*, *TAGntuPoint* & *TAGcluster* classes modified accordingly.
  - Development of the global reconstruction analysis framework
  - (Add analysis folder)
  
- ➔ see the dedicated talks

# Status (i)

- ➔ What we have learnt from GSI2021:
  - It was still difficult to run all detectors in a synchronous way
  - Fixed issues related to corrupted data
  - Fixed local reference frames between different detectors
  - Implemented online debugging, especially for MSD (first raw data reconstruction with shoe)
  
- ➔ We are near the Goal:
  - All detectors are in shoe with all the interfaces
  - Global framework can be used regardless the methods
  - The development on the framework side
    - still need to compute calibration parameters for some campaigns (e.g.: GSI2021)
    - still need improvements in some algorithms (e.g.: CAL clustering, Eta function for MSD)

# Status (ii)

- ➔ We are near the Goal:
  - Time to look to CPU/Memory performance of the code
  - Core developments will be mainly driven by the data analysis requirements
  
- ➔ Ready for global analysis

# 'final' considerations

Reconstruction code is NOT the analysis code:

- ➔ Standalone executable should be interfaced with shoe libraries (e.g.: CalibrateTof, CalibrateBm) avoid doubled long debugging
- ➔ Crtl histograms in L0 reco are there for checking the data
- ➔ All calibration parameters have to be done offline from L0 outputs or from dedicated macros/executables
- ➔ Analysis should be performed from L0/Glb outputs
  - gain in time and flexibility
- ➔ MC branches should not be copied anymore in the reconstruction tree
  - Add new *AddFriendTree(TString fileName, TString treeName)* method in TAGactTreeReader class
  - Add new option in DecodeMC/DecodeGlbToe:  
(e.g.: DecodeGlbToe -in 16O\_C\_400\_L0Out\_NoMc.root -out . . . -mc **-inmc 16O\_C\_400\_shoereg.root**)

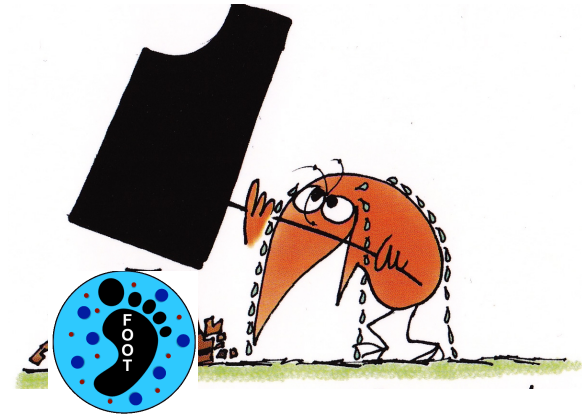
# What's ahead of us..

- ➔ Improve documentation:
  - We still need to update the twiki page
    - twiki [<http://arpg-serv.ing2.uniroma1.it/twiki/bin/view/Main/FOOTSoftware>]
- ➔ Analyse GSI2021 data we need:
  - Align tracker systems at a <100 microns level (BM, VTX & MSD)
  - Fill dead map files (e.g.: MSD)
  - Finalising calibration (e.g.: TW, CAL)
  - Optimized global track reconstruction
- ➔ Prepare CNAO2022 data taking
  - Define the minimal expected setup
  - Define MC simulations accordingly
  - Define a storing strategy for CNAO data while shipping to TIER

# main take home message:

We'd like to thank the great Dr Alessio Sarti

→ All the work he has done in shoe

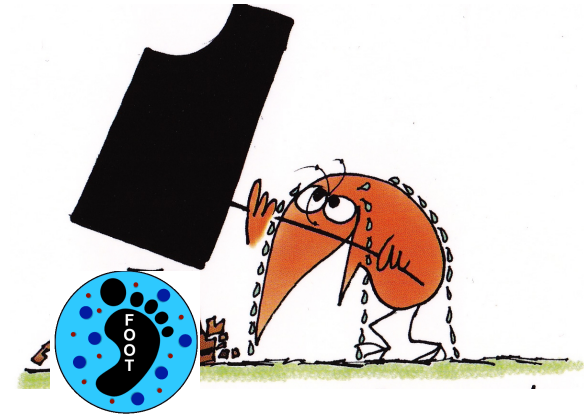


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→ Merging the branch





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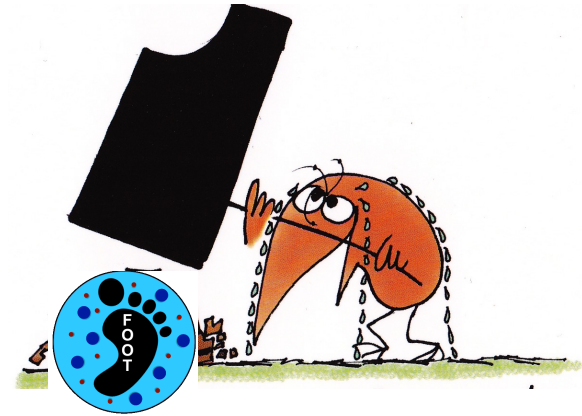
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→ Taking care of meetings:  
(Trying to make people working together)



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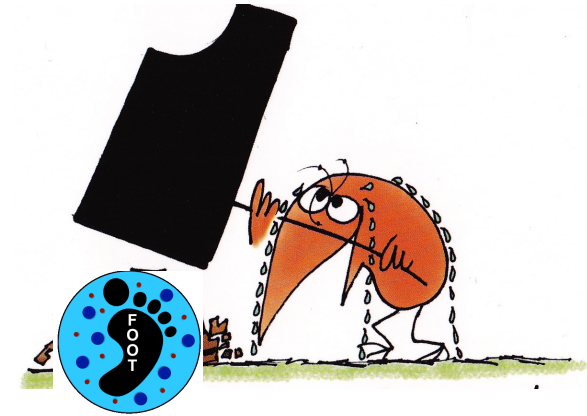
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➔ We will miss you as SW coordinator !



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We welcome Marco who is brave enough to work with me

