

## FTK-IAPP General Assembly, Executive Board Meeting

Paris with Skype connection, March 10 – 11 2015

### MINUTES

The following representatives have been invited to the GA:

Mauro Dell'Orso – UNIPi, Chair	present in Paris
Kostas Kordas – AUTH, Member	present in Paris
Alessandro Iovene – CAEN, Member	present in Paris
Betty Magnin – CERN, Member	connected by skype from CERN
Giovanni Calderini – CNRS, Member	present in Paris
Petros Soukoulis – PRIELE, Member	connected by skype from Alexandroupolis
Simone Donati – UNIPi, Member	connected by skype from Pisa

The following representatives have been invited to the EB:

Mauro Dell'Orso – UNIPi, Project Coordinator, Chair	present in Paris
Kostas Kordas – AUTH, WP 7 Coordinator, Member	present in Paris
Dimitrios Sampsonidis – AUTH, WP 8 Coordinator, Member	connected by skype from AUTH
Paola Garosi – CAEN, WP 2 Coordinator, Member	absent
Francesco Crescioli – CNRS, WP 6 Coordinator, Member	present in Paris
Andreas Sakellariou – PRIELE, WP 1 Coordinator, Member	connected by skype from Athens
Marco Piendibene – UNIPi, WP 5 Coordinator, Member	present in Paris
Chiara Roda – UNIPi, WP 4 Coordinator, Member	connected by skype from Pisa
Betty Magnin – CERN, WP3 Coordinator, Member	connected by skype from CERN

### Other Participants:

P. Giannetti, P. Luciano – INFN Pisa	present in Paris
K. Mermikly - Prisma Electronics	present in Paris
C. Gentsos, S. Gkaitatzis, & I. Maznas – AUTH	present in Paris
S. Citraro, C.L. Sotiropoulou, G. Volpi – UNIPi	present in Paris

The meeting interested the whole week with the following schedule:

1. Monday, March 9, the FTK workshop started with the discussion of applications of our technology at future experiments. We invited researchers from ATLAS and CMS working on Level 1 Tracking for LHC Phase II, and interested to our technology for their projects. We had in Paris the leaders of the Level 1 tracking in CMS (F. Palla) and ATLAS (N. Konstantinidis) and ~10 researchers coming from outside Paris, both ATLAS and CMS. The talks are listed in this agenda:  
<https://indico.in2p3.fr/event/11355/timetable/> (Key to enter phase2track).
  - Introduction 10:00 - 10:20 - A. Annovi
  - General introduction to ATLAS Phase 2 Track Trigger layout 10:20 - 10:50  
- Nikos KONSTANTINIDIS
  - General introduction to CMS Phase 2 Track Trigger architecture and layout 10:50 - 11:20 - F. Palla
  - Trigger Towers dimensioning at CMS: Number of patterns, pT thresholds 11:40-12:10 - S. Viret
  - Latency issues: I/O, matched roads and track fitters 12:20 – 12:50 - S. Viret
  - High speed track fitting on Kintex7 14:00-14:20 C. Gentsos
  - ATLAS requirement on future AM chip 14:30-14:50 A. Annovi
  - CMS requirements on future AM chip 15:00-15:20 F. Palla
  - Experience from ATLAS FTK AM chip "Front End" 15:30-15:50 F. Crescioli
  - Experience from ATLAS FTK AM chip "Back End" 16:00 - 16:20 A. Stabile

and the description of the event is included in the FTK-workshop deliverable:  
FTK\_\_wCNRS\_&TrCNRS.pdf

2. Tuesday, March 10, was dedicated to the General Assembly and the Executive Board. Here is the agenda and the presented slides: <https://agenda.infn.it/conferenceDisplay.py?confId=9246>, the minutes are reported in this document
3. Wednesday morning, March 11, was dedicated to trainings on silicon technology for the IAPP researchers: <https://indico.in2p3.fr/event/11386/timetable/#20150312>  
Two seminars were provided on silicon detectors, their modern cooling systems, their readout electronics, followed by a visit to the laboratories (see photos below).



09:30 Marco Bomben [Silicon Detectors and Microchannel technology](#)

10:00 Roberto Beccherle [FrontEnd chips for Phase-II](#)

Thursday morning, March 12, other two seminars on AM technology have been provided as part of the Paris trainings to disseminate expertise about the new chip:

09:30 F. Crescioli [Content Addressable Memory Kung Fu](#)

10:00 F. Crescioli [SVT/FTK Associative Memory](#)

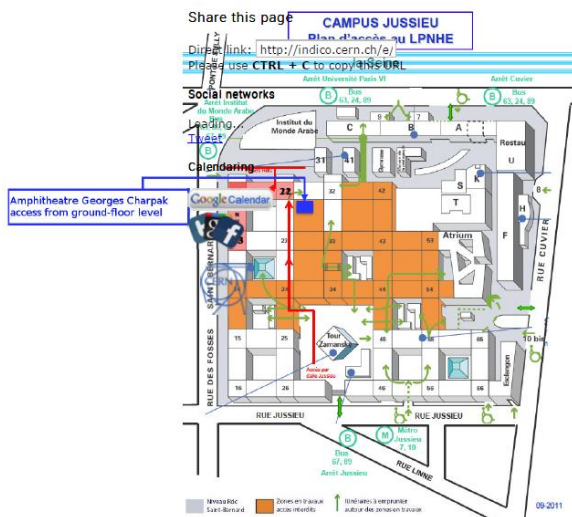
11:00 S. Citraro [FTK AM on the AMB](#)

11:30 F. Crescioli [Write Your Own Associative Memory](#)

They are described in the deliverable: FTK\_\_wCNRS\_&TrCNRS.pdf

4. Thursday and Friday, March 12 and 13, during the afternoon (to allow USA people to connect via skype or Vidyio), were used to complete the FTK workshop with the an update of the status of the whole FTK project and a description of the future evolution of the work (the whole FTK collaboration was invited to participate, with ~30 researchers joining us in Paris and additional ~15 researchers connected by Vidyio. The scheduled presentations are available at the site <https://indico.cern.ch/event/373187/timetable/>

It was a very successful new-year workshop with a lot of scientific high level presentations. The Paris organization was excellent, with a very good network connection, and a wonderful conference room as can be observed by the photo below. It was the Amphitheatre Georges Charpak at the Campus Jussie.



## The 1<sup>st</sup> Section: the General Assembly matters.

M. Dell'Orso & P. Giannetti handled the GA and EB together. Since this was the first meeting after the Mid Term (MT) Review held in Brussels at the beginning of November, a good part of the meeting was dedicated to the presentation and discussion of the Report received from the reviewer of the MT Review, the plans for actions that could answer correctly the requests of the reviewer, the discussion of the Periodic Review, almost ready, to be submitted before the end of March. In addition we discussed the incoming deliverables and milestones, consolidating the future plans:

### THE GENERAL ASSEMBLY

- ***Presentations by Mauro Dell'orso & Paola Giannetti.***

#### **1 -- Mid Term comments and next Report**

***Here follows a summary of the MT review report:***

- (a) Positive Mid Term Review Overall assessment: <<<..... The training activities were executed according to the initial schedule, with all the participants well engaged in the specific training and research activities. .... Good progress (the project has achieved most of its objectives and technical goals for the period with relatively minor deviations >>>
- <<<Does the project provide evidence that it will produce significant scientific, technical, commercial, social impacts?
- |                   |            |
|-------------------|------------|
| Scientific impact | <b>No</b>  |
| Technical impact  | <b>Yes</b> |
| Commercial impact | <b>No</b>  |
| Social impact     | <b>Yes</b> |
- Have the research/training/transfer of knowledge objectives for the period been achieved? **YES**
- Has the project as a whole been making satisfactory progress in relation to the Description of Work (Annex I to the grant agreement)? **Yes**
- Has each WP been making satisfactory progress in relation to the Description of Work (Annex I of the grant agreement)? **Yes**

Have planned deliverables (and milestones) been achieved for the reporting period? **Yes**

Are the objectives for the coming period(s) (i) still relevant and (ii) still achievable within the time and resources available to the project **Yes**

Additional comments:

- (a) There are some minor deviations related to: a. delay in the production of the Associative Memory chip, ..... The consortium should pay attention at the risks (recruitment, delays in the execution of the chips) and developing a mitigation strategy..... The project management team must ensure that ....no deviations from the content of the plan do occur.....
- (b) ... there are some issues related to the activities related to transferable skills, as the Task 8.3 does not list any concrete actions/activities to be performed.
- (c) Little progress was made towards expansion of the original project program;
- (d) it is expected that consortium should take some decisive steps towards deploying the technology under development towards other fields, in accordance to the original proposal..... Also, management team should ensure that continuing their work in the medical field (with possible access to patient data of confidential nature) is made in accordance to the specific procedures and regulations in the field.....

**(b) Objective and Workplan:**

Does the report show the progress of the researcher training activities/transfer of knowledge activities? **YES**

**Comment:** .... The aspects related to non-technical training activities must be better highlighted in future reports and should clearly indicate how the associated events were organized and attended.

Does the report show the progress of the research activities? **YES**

In a case of a Mid-term review meeting:

- |      |   |            |
|------|---|------------|
| I.   | did the fellows demonstrate sufficient knowledge of the research project? | <b>YES</b> |
| II.  | were the fellows aware of their rights and obligations as a MC fellow?    | <b>YES</b> |
| III. | did any issues requiring REA follow-up arise during the meeting?          | <b>NO</b>  |
| IV.  | Have any corrective actions been implemented?                             | <b>NO</b>  |

**(c) Resources ALL OK:**

**(d) Implementation of the Project:**

Has the project management been performed as required? **YES**

**Comments:** pay more attention to the implementation of the program from the perspective of “communication promotion between the scientific community and the general public”; ..... responsibility of the project management team to ensure that all resources are properly used for the benefit of the project and the possible interactions with other projects in the field are monitored and handled accordingly

Has the collaboration between the beneficiaries been effective? **YES**

**(e) Dissemination and Communication Activities:**

Has/Have the beneficiaries disseminated project results and information adequately (e.g. publications, conferences, etc.)? **YES**

**Comments:** dissemination level through journal papers and conference presentations can be qualified as “satisfactory”. The management team, together with the supervisors should come up (and proceed with execution) of a more ambitious plan in terms of results dissemination through Journals and Conference participations.

Has there been suitable communication with potential users of the project/research results and other stakeholders? **PARTIALLY**

**Comments** Communication with potential, direct users of the project results (CERN) was outstanding.... Unfortunately, the team didn't managed to reach – in enough depth – to the stakeholders outside the primary application, e.g. the medical instrumentation industry, the manufacturers of application oriented microcontrollers, etc. A more detailed plan, with specific tasks and objectives must be set up for the second part of the project, to ensure a better **transfer** of information to potential stakeholders.

Where applicable, is the project website useful, up to date, accessible to the public and does it acknowledge the EU funding? **PARTIALLY**

**Comments:** It acknowledge EU funding, through the FP7, but without explicitly mentioning the Marie Curie action(s). This must be updated.

**(f) Flag the Project**

Flag(s) for the project	<b>Yes</b>
Highlight as a success/case story	<b>No</b>
High visibility/media attractive project	<b>Yes</b>
Substantial R&D breakthrough character	<b>Yes</b>
Project with an impact on EU policies	<b>No</b>
Outstanding Use/Exploitation of results	<b>No</b>
Significant R&D participation from outside EU	<b>No</b>
Good gender balance	<b>No</b>
Substantial participation by commercial sector	<b>No</b>
Promotion by family-friendly working environment	<b>No</b>
Contribution towards long term impact in training/career development/networks after project end	<b>No</b>
Researcher's soft/complementary skill	<b>No</b>
Good innovation potential	<b>No</b>
Other	<b>No</b>

**The presentation/discussion of the Periodic report we are near to submit follows.**

**In particular answers to the requests of the reviewers, listed below and underlined by specific presentations during the GA (see below)**

**FEEDBACK AND RECOMMENDATIONS FROM THE MID TERM REVIEW.**

**LIST OF THE TRAININGS that each fellow attended (see [FTK-Additional\\_info\\_v2.pdf](#))**

**ROADMAP TO BE FOLLOWED in order to EXPAND THE TECHNOLOGY of the PROJECT TOWARDS OTHER FIELDS (see [Calliope talk](#))**

**RISKS ASSOCIATED WITH THE WORKING PLAN (see [Francesco talk](#))**

**ETHICAL ISSUES IDENTIFIED AT THE REVIEW**

**BETTER FUTURE ACHIEVEMENTS of OBJECTIVE "O.7.1." MOST APPROPRIATE ACTIONS. (see [Kostas talk](#))**

**MORE AMBITIOUS DISSEMINATION PLAN THROUGH JOURNALS AND CONFERENCES. (see [Calliope talk](#))**

**DEFINITION &IMPLEMENTATION OF A DETAILED PLAN, WITH SPECIFIC TASKS AND OBJECTIVES,**

**REGARDING THE OUTREACH OF POTENTIAL STAKEHOLDERS OUTSIDE CERN. (see [Paola talk](#))**

**BETTER DESCRIPTION OF THE TRAINING, MORE DETAILS ABOUT HOW EVENTS WERE ORGANIZED and ATTENDED (see [the report](#))**

AS THE PROJECT DID NOT REACH ITS GOALS FOR GENDER BALANCE (see the report)  
CLEAR DESCRIPTION OF HOW TRANSFER OF KNOWLEDGE IS IMPLEMENTED (see the report)

## **2 -- New Gantt Chart** Paola

**A set of changes have been approved:**

- \_ Gentsos will spend 6 months at PRIELE this third year to bring ahead quickly is work on SLP1.
- \_ P. Kalaitzidis will substitute Alessandro Iovene at CERN the third and fourth years
- \_ K. Mermikli will substitute Kalaitzidis at AUTH on November-December this third year.
- \_ Ioannis will substitute Panos that was not eligible the fourth year at PRIELE

## **3 -- Financial report - status** Paola

## **4 -- Next steps - Deliverables & Milestones, CERN recruitment** Paola

## **5 -- Roadmap to expand the technology of the project towards other fields** - Calliope

## **6 -- risks associated with the working plan - mitigation plan** Crescioli

## **7 -- Communication promotion between the scientific community and the general public** Kostas

## **8 -- The dissemination plan through journals and conferences should be made more ambitious** Calliope

## **9 -- Outreach of potential stakeholders outside the CERN community** Paola

## **10 -- FTK web link** Donati

### **THE EXECUTIVE BOARD**

*Following PRESENTATIONS about the work performed by the FTK researchers (see the slides at web site):*

- 11** One year working for WP6 Beccherle
- 12** Power Supply redesign Piendibene
- 13** 2-D clustering algorithm verification Akis Gkaitatzis
- 14** SLP1 firmware development and tests Christos Gentsos
- 15** WP5: Imaging Calliope
- 16** IMPART meeting

Additional talks from IAPP researchers were included in the FTK Workshop, in particular from Naoki Kimura, Saverio Citraro, Francesco Crescioli.

**Papers are collected here:** <http://www.pi.infn.it/~paola/IAPP/publications/>

**Talks and posters here:** <http://www.pi.infn.it/~paola/IAPP/talks-posters/>

A lot of interesting work was presented and discussed. Our activity generated the new project IMPART, this was a nice occasion to discuss its organization and its start of work.