

**Faculty
of Physics**

WARSAW UNIVERSITY OF TECHNOLOGY



ALICE



Status of Event Display activities at WUT

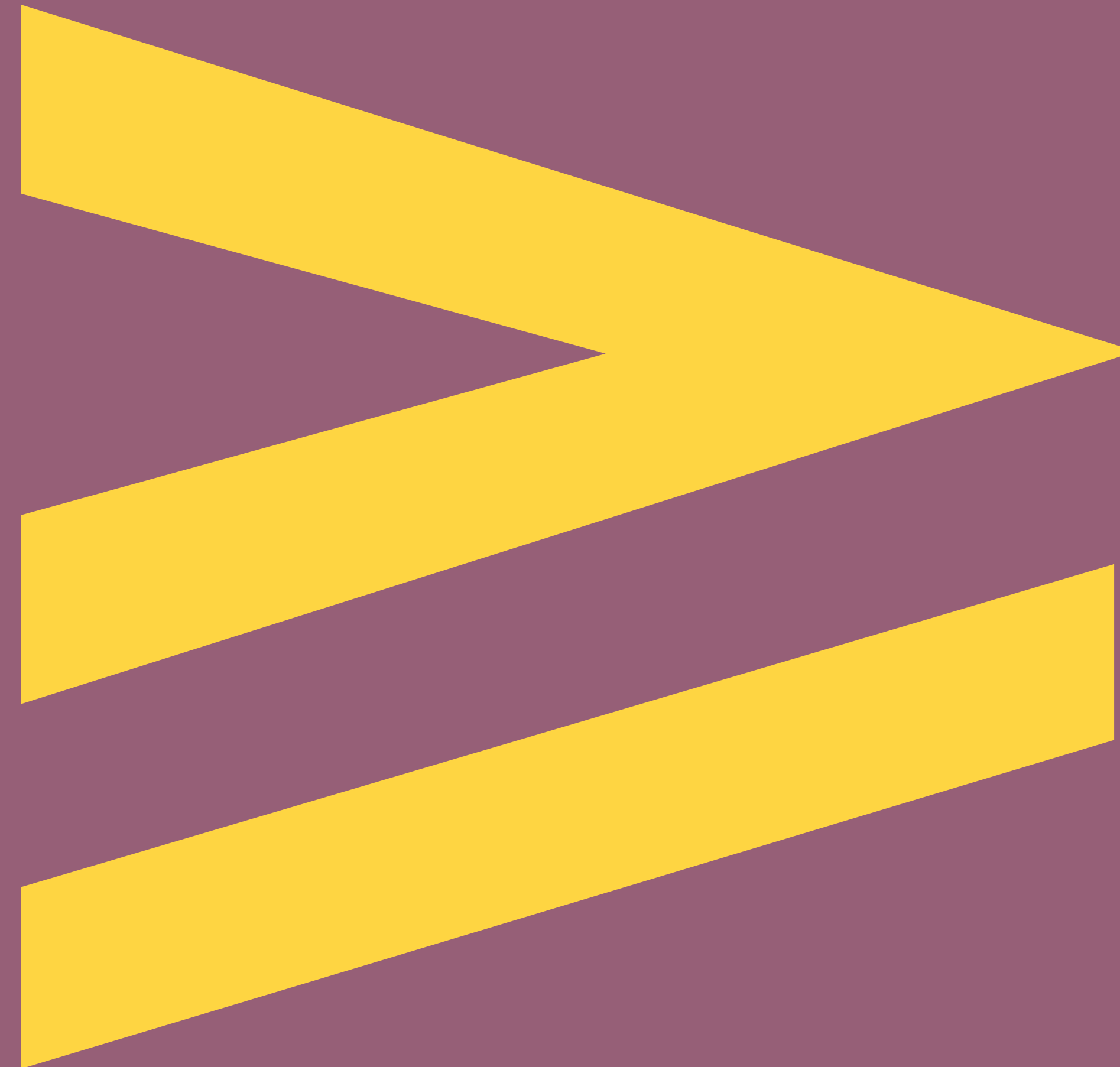
from the Team Leader's perspective

Łukasz Graczykowski

ALICE Software and Computing Week

CERN

2 April 2019



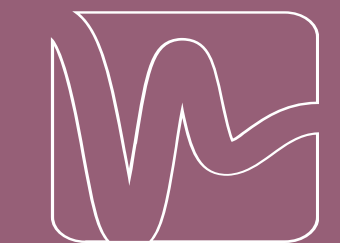
Status of ED activities at WUT

- **Task delegated to the Computer Graphics Division of the Faculty of Electronics and Information Technology (EiTI)**
- **Person responsible:**
 - **Julian Myrcha** – leader of Work Package 9
 - no other people involved long-term (only undergraduate students who come and go)
- **EiTI took full responsibility of ED (maintenance and development) after Jeremi Niedziela left ALICE**
- **Struggling with limited funding and manpower:**
 - Julian working part-time only (in addition to teaching and other university duties)
 - current funding at WUT does not allow hiring new people for ED activities



Status of ED activities at WUT

- **Two grant applications for ED in 2015 and 2016 were rejected by the funding agency:**
 - ED not considered a “scientific work”
 - ED is currently a part of the small joint project with Machine Learning activities of WUT, which does not allow hiring new people (finishes June 2019)
- **Two weeks ago the Faculty of Physics secured funding for a big educational project within the EU framework**
 - project is devoted to development of Masterclass
 - foresees hiring one computer-scientist full-time for one year
 - we see it as a way to develop **a common application (client displaying events) for both ED and Masterclass**



EVENT VISUALISATION

RUN 2 → RUN 3

Julian Myrcha, Warsaw University of
Technology

RUN 3

- We keep ROOT-based visualization as our main solution,
- however, the software has been/will be rewritten from scratch,
- Web-based solution planned was investigated already -
 - Currently I am not able to implement it on the web (there is too much uncertainty)
 - Will be done after normal disco

DISCO

- Already implemented:
 - ✓ views (3D + projections),
 - ✓ geometry and events managers,
 - ✓ configuration manager,
 - ✓ example data interpreter class

DISCO

Current activities:

- Displaying data from previous runs (from AliESDi.root) to achieve backward compatibility (9.1.7)
- Obtaining sample data compatible with O2
 - Using O2 simulations we have simulated hits from ITC TPC
 - Something more we could get?

MILESTONES #1 (D.1)

9.1 Disco - main visualization module based on ROOTs

Task name	Milestone	Expected
9.1.1 Preparation of new simplified geometry (one txt file per detector with a list of volumes)	Q2 2017	Q2.2019
9.1.2 Porting core of AliEve to O2 disco	Q3 2017	done
9.1.3 Using Alfa (DPL) in place of pure ZeroMQ	Q1 2019	Q2.2019/Q3.2019
9.1.4 Porting data macros to the new scheme (one class per detector)	Q1 2019	30.05.2019
9.1.5 Implementation of functions interpreting new data types as visualisation objects (for example TFs, CTFs, new AODs)	Q4 2018	Not sure Q3.2019 (According to input availability)
9.1.6 Development of continuous-mode visualisation.	Q4 2018	Not sure Q3.2019 (According to input availability)

MILESTONES #2 (D.1)

9.1.7 Port additional functionality from AliRoot to O2

Task name	Milestone	Expected
Navigation between events	Q1 2019	30.04.2019
Screenshots	Q1 2019	Q2.2019
Preferences GUI	Q1 2019	Q2.2019
Drawing calo towers, vertices, cascades, kinks, V0s, clusters (points)	Q1 2019	30.05.2019
Muon Tracks	Q1 2019	According to data availability
Searching in current run and selecting only interesting events	Q1 2019	Q2.2019

MILESTONES #3 (D.2)

9.2 Data and geometry converters

Task name	Milestone	Expected
Update data converter to work with new data types	Q1 2019	Not sure Q2.2019 (According to input availability)
Test geometry converter with new simplified geometry	Q3 2017	Q2.2019

MILESTONES #3 (D.3, D4)

Unrelated tasks

Task name	Milestone	Expected
9.3 Web application for communication with external applications	Q1 2018	Q2 2019
9.4 Alice visualization in Total Event Visualizer (TEV)	Q1 2019	Q4.2019

STATUS SUMMARY

- There are a quarter delay in main tasks (and it should speed up)
- The biggest stopper is lack of new format of data to be displayed
 - ✓ We have got recently hits data from ITC ITS simulation in O2
 - ✓ No idea how start with time-frames
 - ✓ Display from local file
- Alpha (DPL) communication require data to be sent plus more knowledge on DPL
- Tasks related to new simple geometry were forgotten and should be done ASAP

WP9 WEEKLY MEETINGS

- There are weekly WP9 meetings on Thursday 13.45
- Gathering requirements, discussing interfaces and formats
- There is a place where I gather information
- I plan to move them to Thursday at 11.00
- I welcome everybody interested or wishing in participate
- Especially with idea what can be done differently to Run 2
 - latest idea which arrived was to be able prepare animations to specified events/tracks

WP9 IN 2019 SUMMER

- I plan to be on site in CERN from mid July to mid August (2months)
- There will be a time to complete tasks (I will not have other duties than CERN during this period)
- There will be at least one student in CERN working on disco during summer
- There will be support from students in Warsaw

THANK YOU