



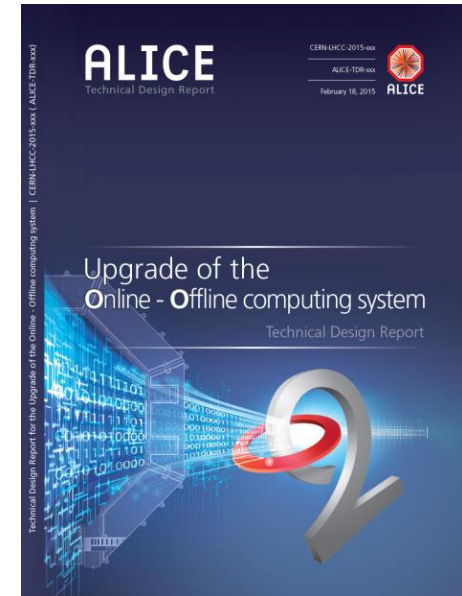
# O<sup>2</sup> Project Roadmap

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## O2 Project: What's Next ?

- TDR close to its final state and its submission to the LHCC
- What's next ?  
Build the system !
- We need a roadmap with
  - Planning
    - Work Breakdown Structure
    - Major milestones with deliverables
    - Identify technical decisions to be taken
    - Review process
  - Resources

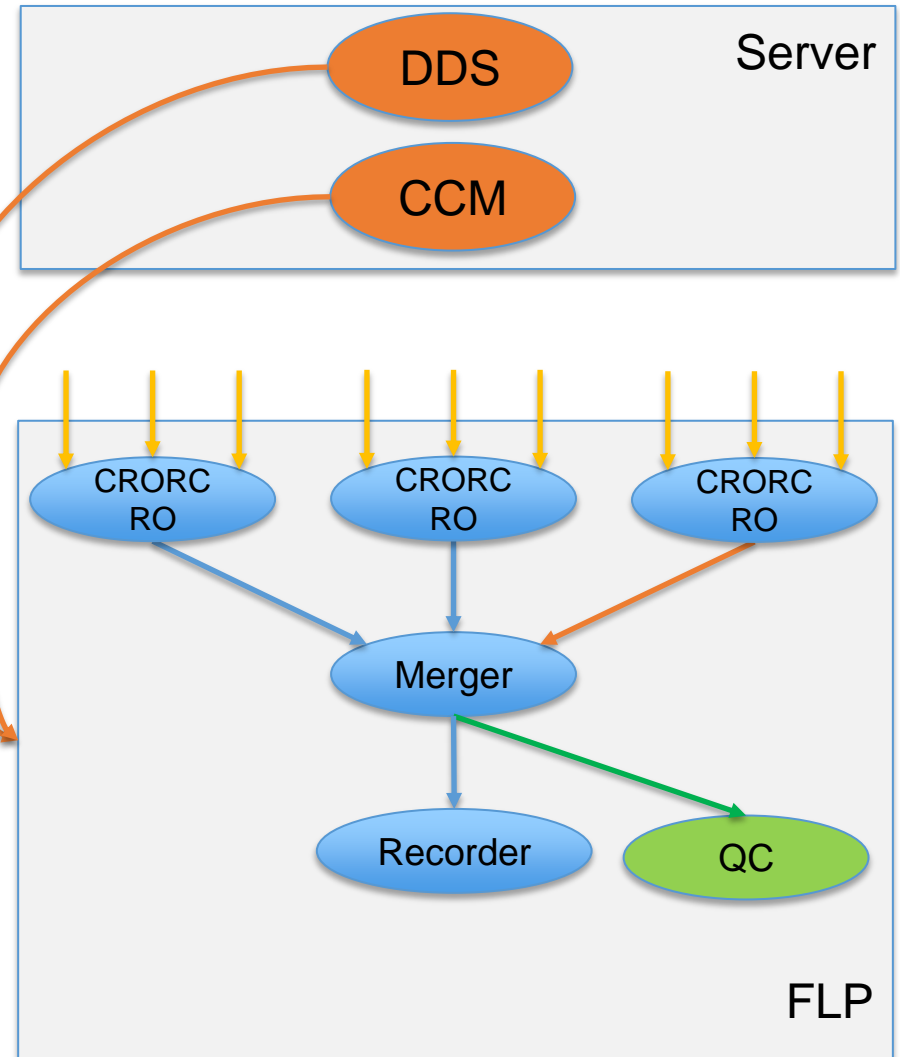


# Commissioning milestones

	Target	Capabilities	Hardware
Q1 2017	- ITS half-layer test	<ul style="list-style-type: none"> <li>- Detector element read-out</li> <li>- 10's of GBTs, 1 or 2 CRUs</li> <li>- QC core and detector module</li> <li>- DDS, CCM</li> <li>- Documentation</li> </ul>	Dedicated 1 Server 1 FLP
TBD	- Other detector tests such as TPC chamber or sector test	<ul style="list-style-type: none"> <li>- Detector element read-out</li> <li>- 100's of GBTs, ~10 CRUs</li> </ul>	Dedicated 1 Server Several FLPs 1 EPN
Q2 2018	<ul style="list-style-type: none"> <li>- ITS surface test</li> <li>- TPC surface test</li> <li>- Cosmic</li> </ul>	<ul style="list-style-type: none"> <li>- 1 full detector read-out</li> <li>- Long period operation</li> <li>- Standalone reconstruction possible</li> </ul>	Dedicated or remote use of final system
Q4 2019	ALICE Cosmic	<ul style="list-style-type: none"> <li>- Full capabilities at reduced performance</li> <li>- Test with data injected in CRU</li> </ul>	Final system ~10% EPN+DS
2019-20	ALICE/IT data challenges	- Full chain including GRID	Final system
Q2 2020	ALICE PbPb	- Full capabilities at full performance	100% EPN+DS

# Data Flow Software (1)

- CRORC Read-Out (CRORC RO)
- Data Recorder
- Basic dataflow using common building blocks from Alfa
- Control, Configuration, Monitoring
  - DDS
  - State machines and messages
- QC
  - Framework
  - Detector-specific agent



## Data Flow Software (2)

O2 Internal milestone dates with corresponding functionalities

(FTE yr)

- Sep '15 (1.5)
  - CRORC read-out
  - Basic dataflow (use of common building blocks from Alfa to assemble the FLP dataflow)
  - System monitoring (using MonaLisa)
  - Reuse of the existing DATE infologger for information and error messages
  - DDS
  - Raw data format + conversion from existing Run1 data to Run3 format: (0.5)
- Dec '15 (1)
  - Basic dataflow (FLP to EPN)
  - Control (state machines and messaging)
  - QC
  - Reuse of the existing ALICE eLogBook
- Dec '15      Availability of a CRU prototype
- Mar '16      System integration and characterization (1)
- Sep '16      Documentation (1)
- Dec '16      CRU firmware and read-out software (4)
- Dec '16      Release for the detector teams (e.g. ITS test of Q1 2017)

# Complete synchronous chain for ITS and TPC (1)

(Input from Peter and Mohammad)

(FTE yr)

- Apr '15:
  - Full chain with TPC data of Run 1 and HLT algorithms with wrappers and without calibration
- Dec '16: Full chain for Run 3
  - Framework with example algorithms e.g. CA
  - DDS: (2)
  - FLP to EPN data transport: (0.5)
  - Reconstruction @ EPN: (3)
  - Calibration @ FLP: (3)
  - CCDB (New OCDB database): (2)
  - TPC calibration: (4)
  - TPC compression: (1)
- 1 year: the HLT calibration could be added
- 2 years the CA in the new framework for GPU for a new person

# Complete synchronous chain for ITS and TPC (2)

*(Input from Peter and Mohammad)*

(FTE yr)

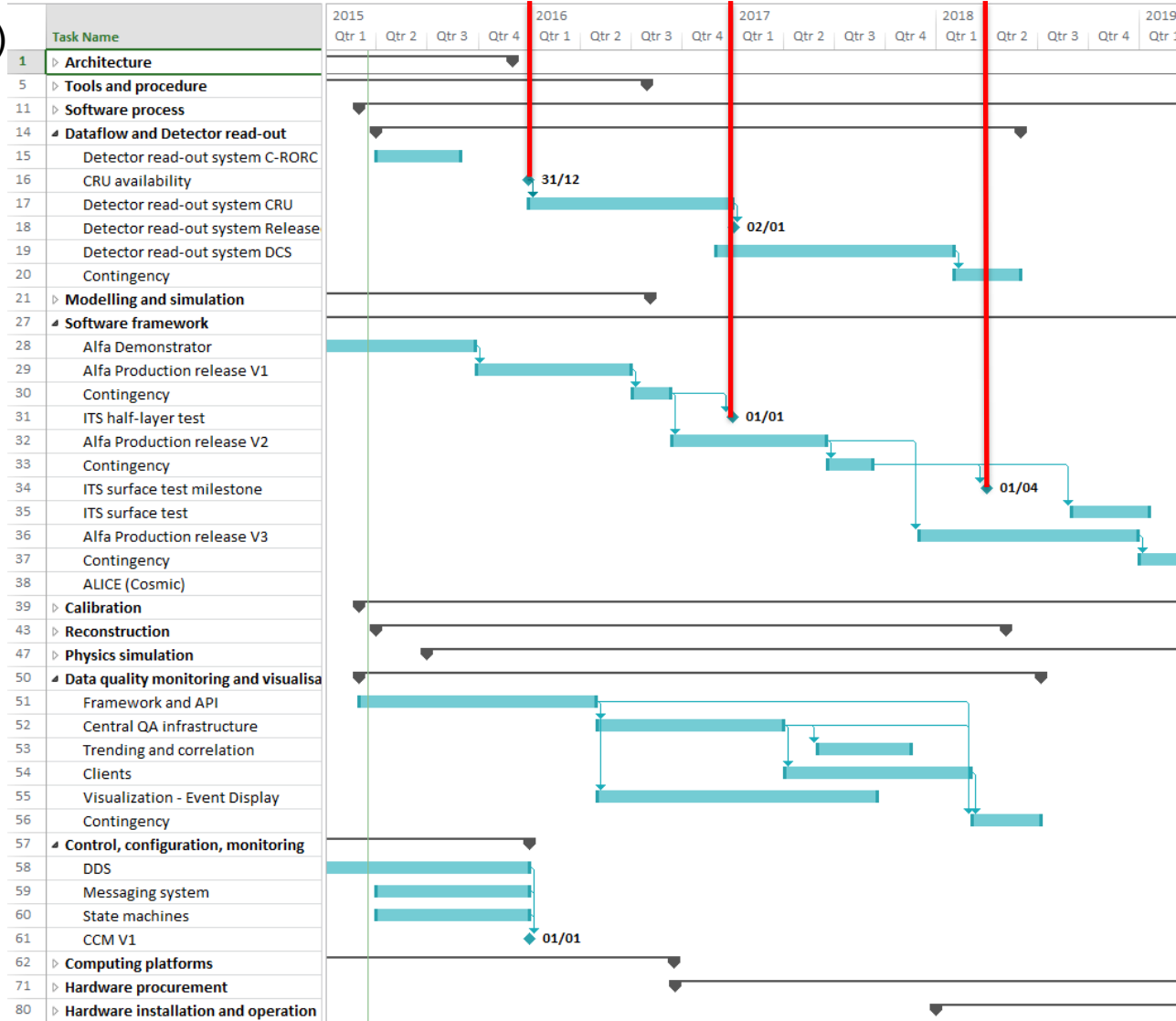
- Full chain for all detectors:
  - Adding to the framework: 14 detectors x 1 = (14)  
(conversion of the Aliroot to the Alfa/O2 fw);
  - MCHF+MTR+MFT to be developed
  - FIT to be developed
  - Calibration TRD: (0.5)
  - Calibration TOF: (0.5)
- MC simulation: (ITS has already been upgraded for the upgrade)
  - Extract geometry
  - Geant4 multithreading: (1)
  - TPC geometry: (0.25)
  - TPC compressed hits, digitisation, timeframes: (0.5)
  - Other detectors: 14 detectors x 0.5 = (7)
  - Validation of simulation: (1)



# Project Schedule

## Some Key Milestones (1)

- Q4 2015 CRU Availability
- Q1 2017  
Software Framework V1  
Detector read-out 1 CRU  
QC  
→ ITS half-layer test
- Q2 2018  
Software Framework V2  
1 detector full read-out  
Dedicated hardware  
→ ITS or TPC surface test



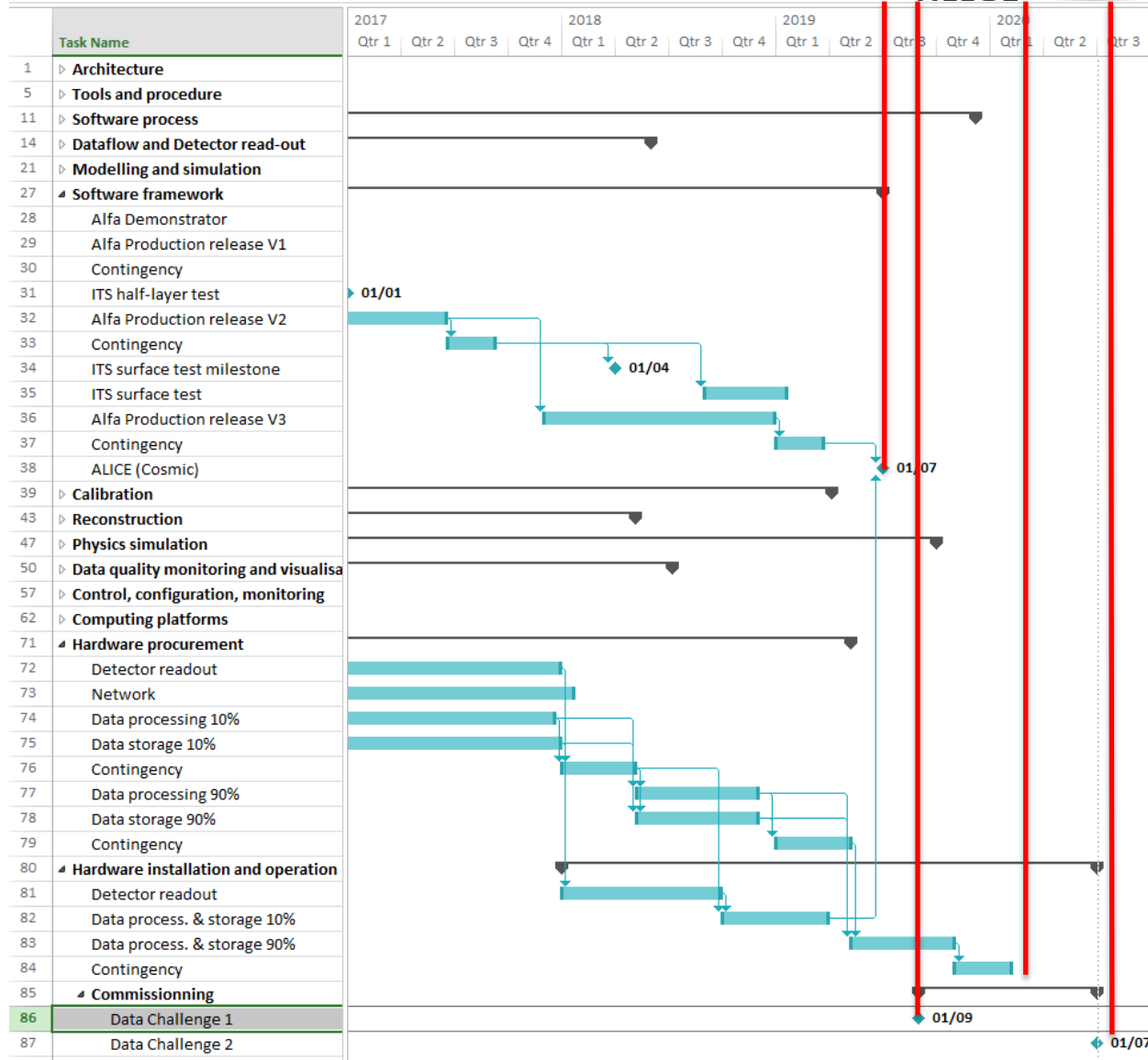




# Project Schedule

## Some Key Milestones (2)

- Q2 2019  
Software Framework V3  
Full capabilities  
Deployment of 10% EPN+DS  
→ ALICE Cosmic
- Q3 2019  
Data challenge 1 with IT dept.
- Q1 2020  
Full deployment EPN+DS  
→ ALICE with PbPb collisions
- Q2 2020  
Data challenge 2 with IT dept.



## Next Steps

- Refine the WBS and the list of milestones
  - Finer grain tasks
  - Document all commissioning and internal milestones
- List the decisions to be taken and the process to reach them
- Milestones tracking
  - Create the corresponding lists of Jira issues with target dates
- Review process
  - Review the list of Jira issues during the O<sup>2</sup> plenary meetings