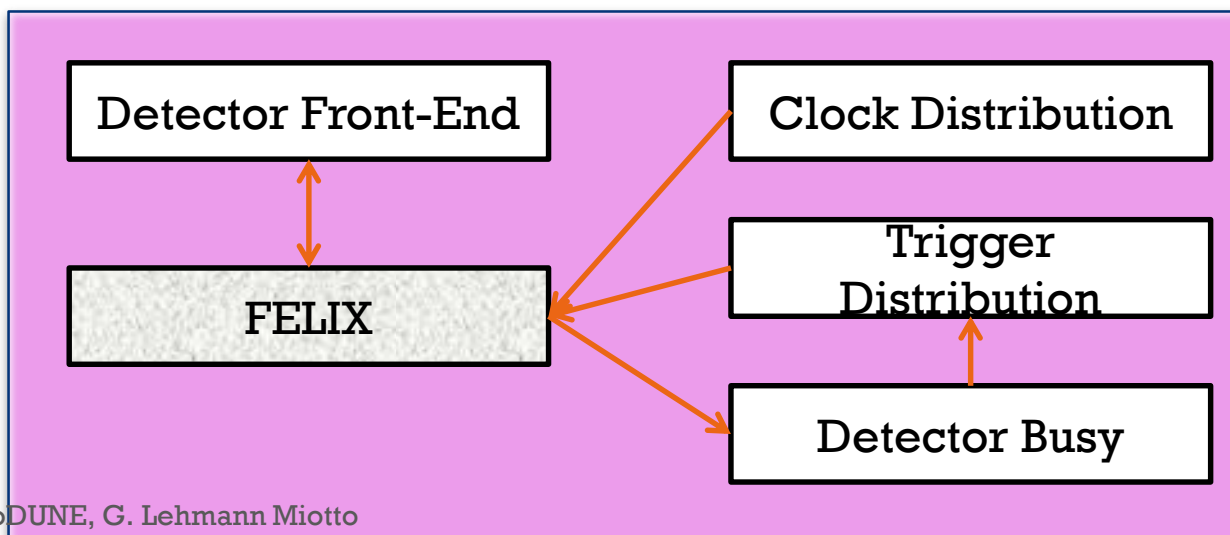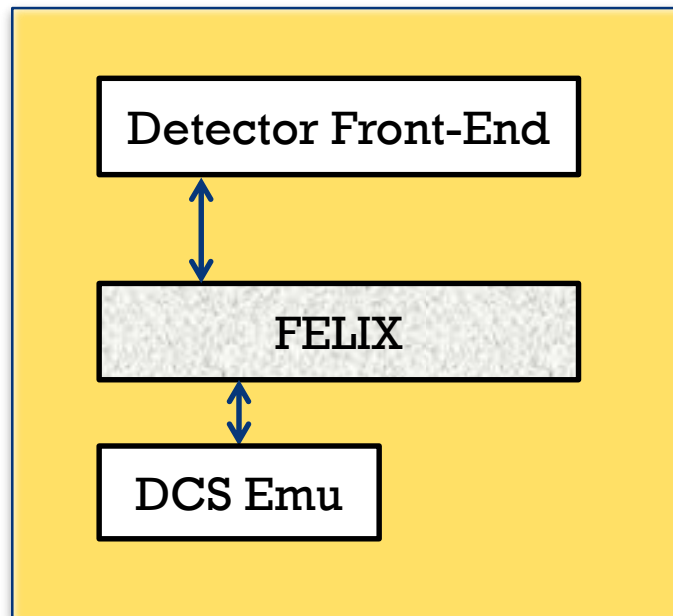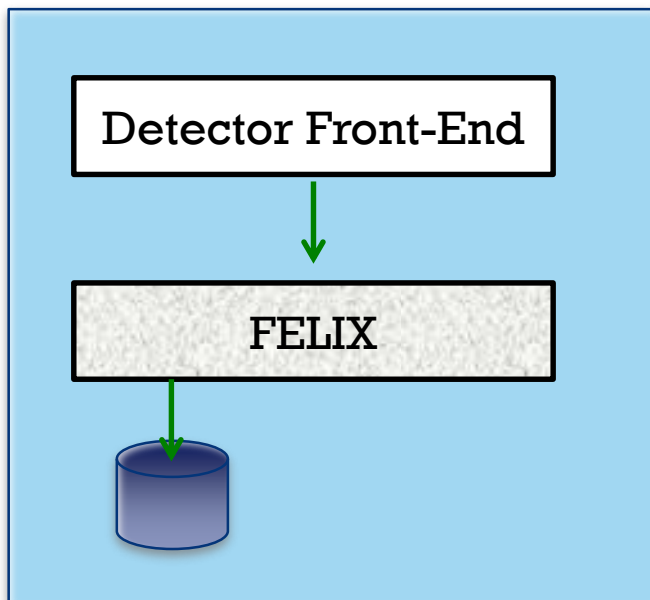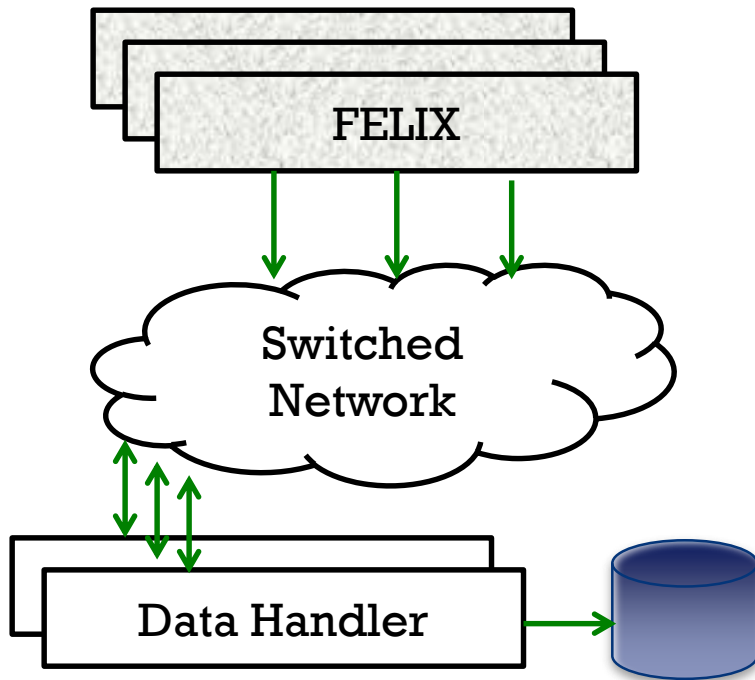# Tasks Breakdown

Giovanna Lehmann Miotto

+ Introduction

- Draft subdivision into functional blocks

- Development needs
  - Hardware
  - Emulators
  - Data samples

- Many tasks can be worked on in parallel an independently

- Regular integration steps should be planned early on, to allow experts getting together and making fast progress
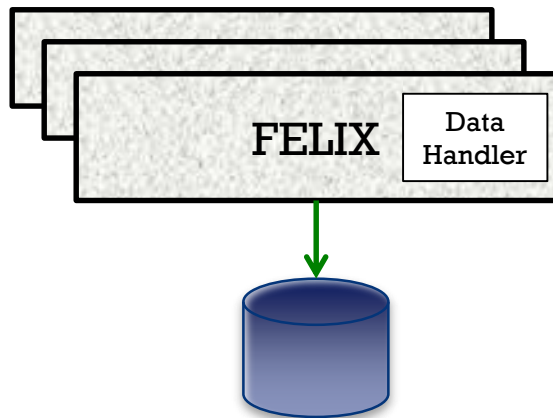
WIB - FELIX

FELIX – Data Handler

- Implement Data Handler receiver and building into artDAQ super-fragment

- Evaluate data compression algorithms in Data Handler

- Evaluate possibility of doing data selection in Data Handler

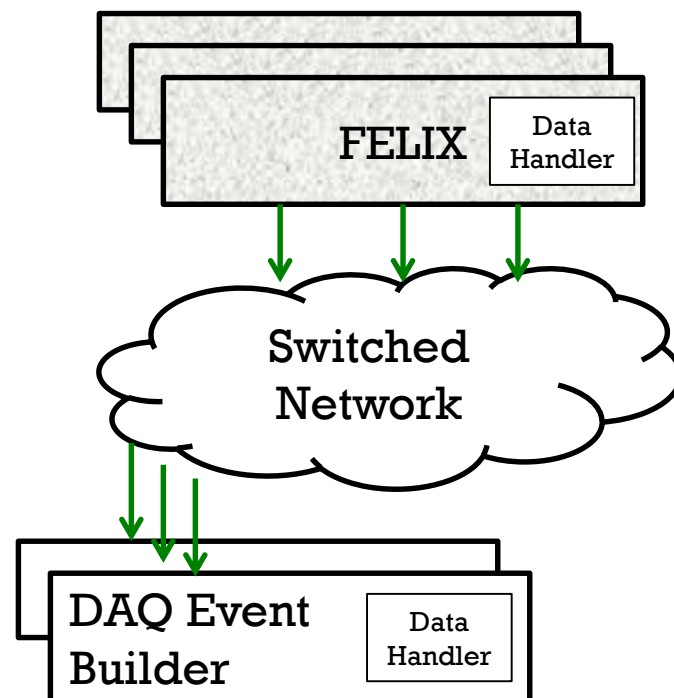- Fully debug FELIX output path

Can start NOW

+ FELIX – Data Handler (2)

FELIX | Data Handler

Requires careful thinking!

- Implement Data Handler receiver and building into artDAQ super-fragment

- Evaluate data compression algorithms in FELIX FPGA
  - Requires discussion with FELIX FPGA developers

- Evaluate possibility integrating Data Handler functionality into the FELIX server
  - May require modification of the routing FELIX application

- Assess whether this scenario is compatible with the other functions of FELIX

FELIX – Event Builder
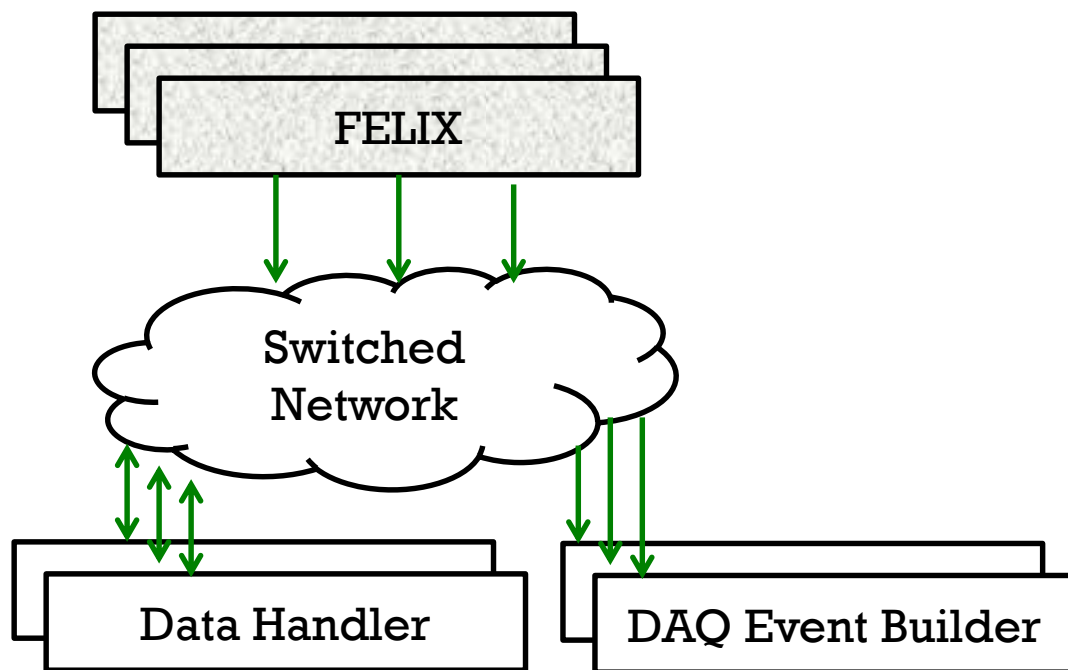
Working prototype summer 2016

+ DAQ

Detector Front-End → **FELIX** → **Switched Network**

DAQ Data Handler ↔ Switched Network ↔ **Online Processing**

DAQ Event Builder ↔ Switched Network

DAQ Storage System
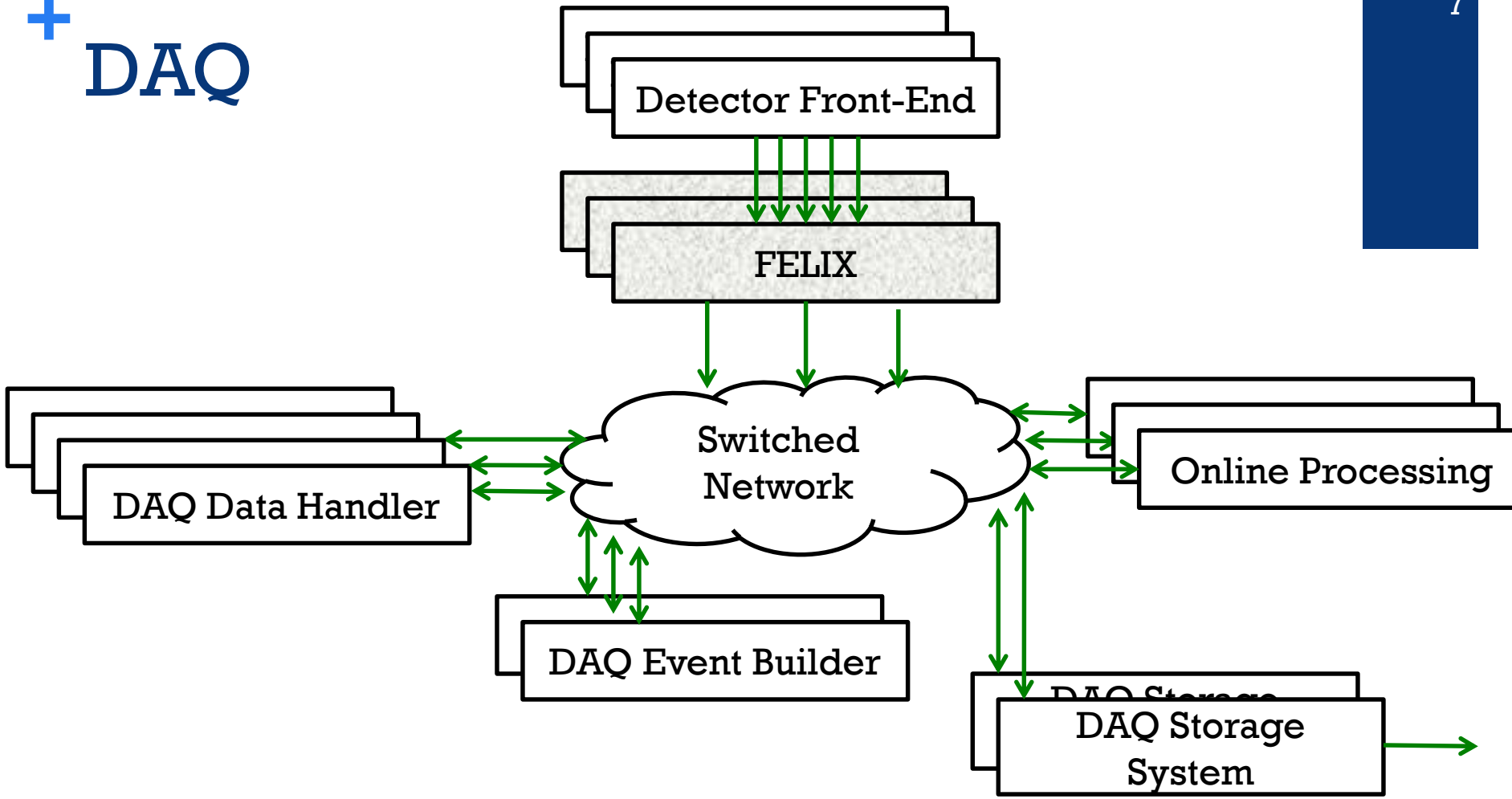
**Depends on overall DAQ status;
proof of principle may be done based other systems.**

+ DCS

Detector Infrastructure

Detector Front-End

FELIX

Commands & settings

Status

Switched Network

Commands & settings

Status

Detector Control System
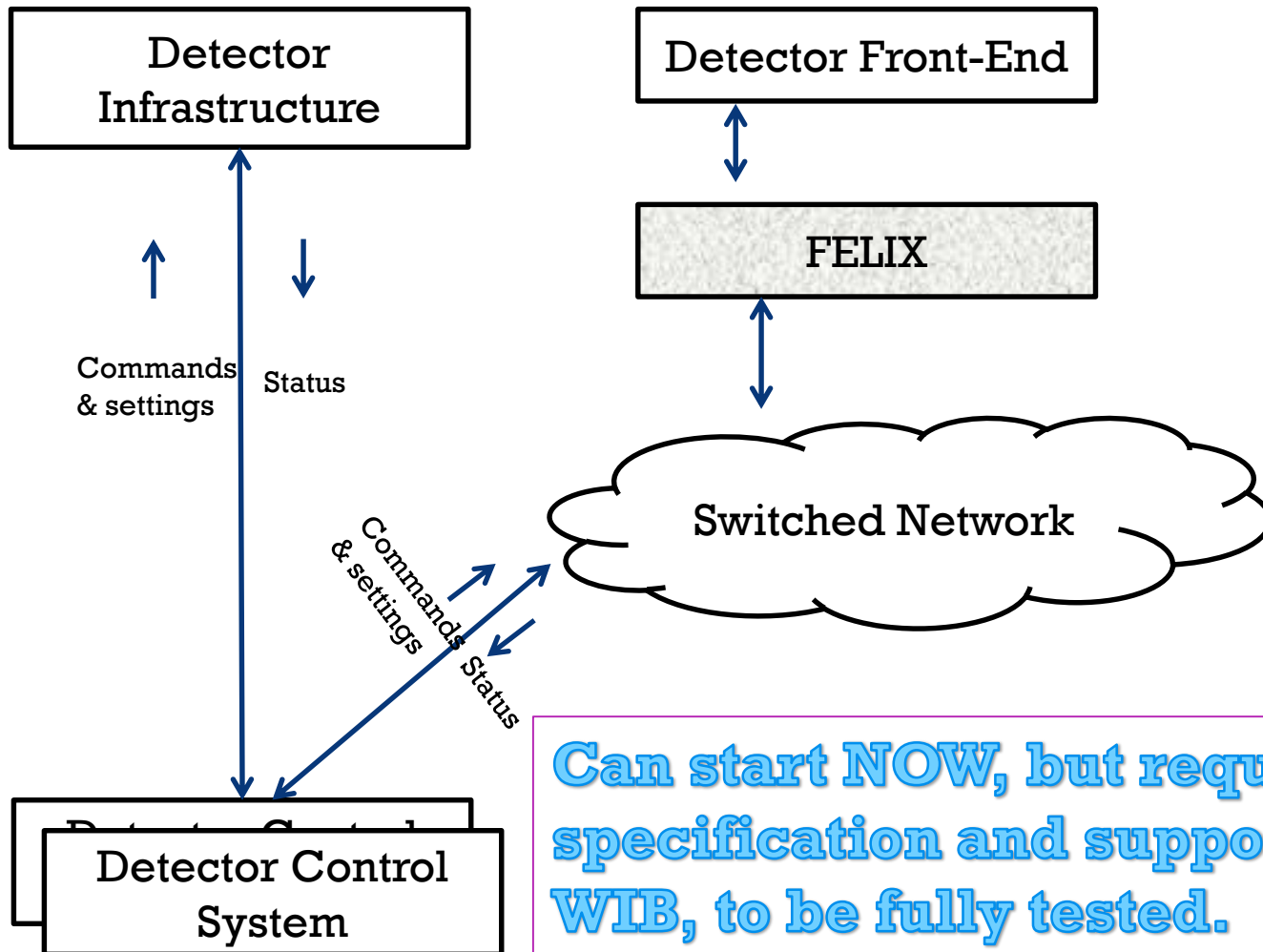
Can start NOW, but requires DCS specification and support from WIB, to be fully tested.

Complete System

Detector Infrastructure

Detector Front-End

Clock Distribution

Trigger Distribution

FELIX

Detector Busy

Detector Control System

Switched Network

DAQ Data Handler

Online Processing

DAQ Event Builder

DAQ Storage System

DAQ Storage System
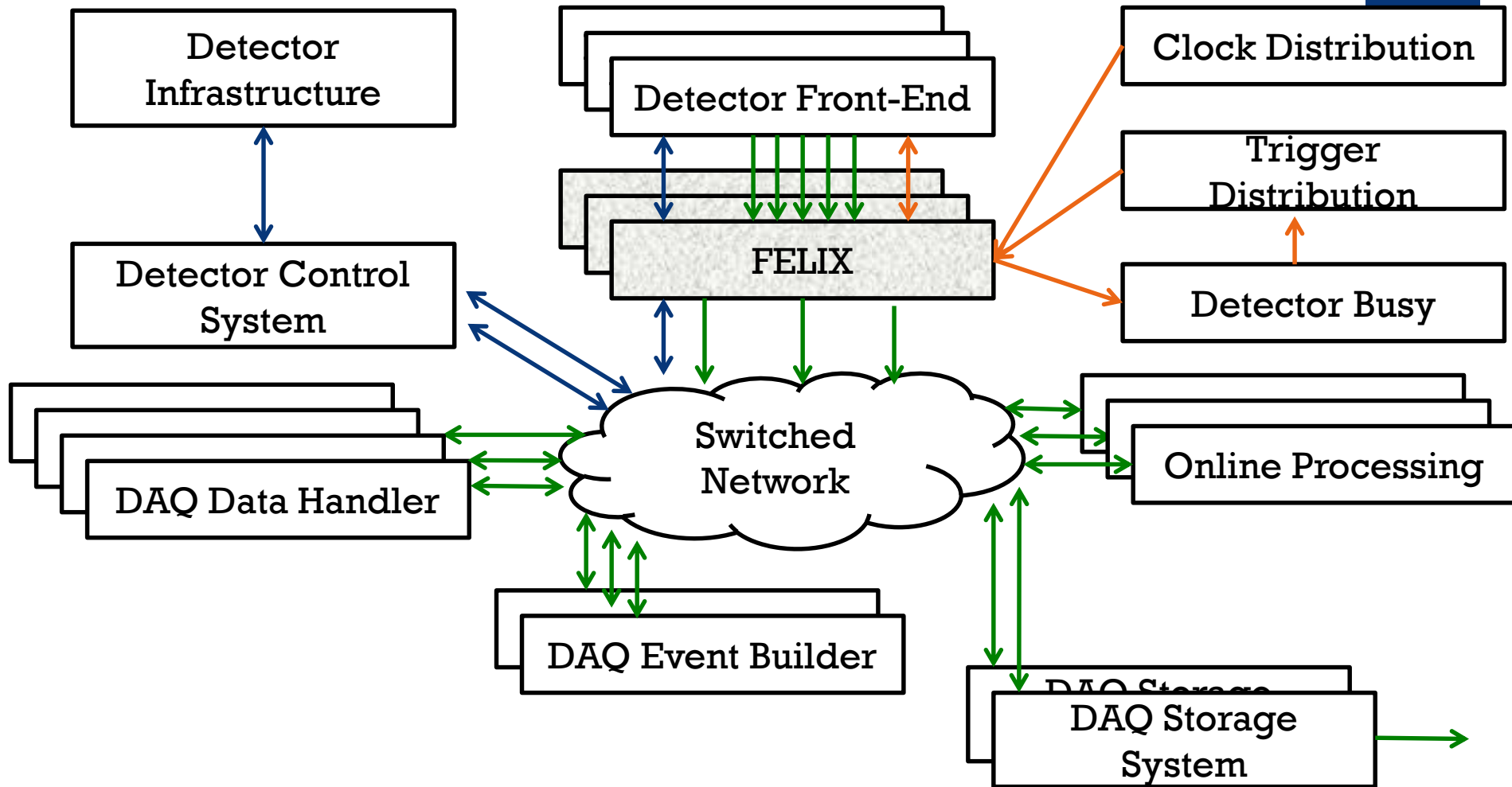
+ Summary

- Ready to start development effort now

- Good communication with the DAQ community needed in order to agree on data formats, protocols, etc.

- Collaboration with WIB developers essential
  - Establish which functions may be tested when

- FELIX development boards can be purchased (one already available at CERN for us)

- This is the right time to build a developers team with all interested parties and split the work among ourselves