

Global slow control

9th AGATA Week

Eric Legay

08/02/2010



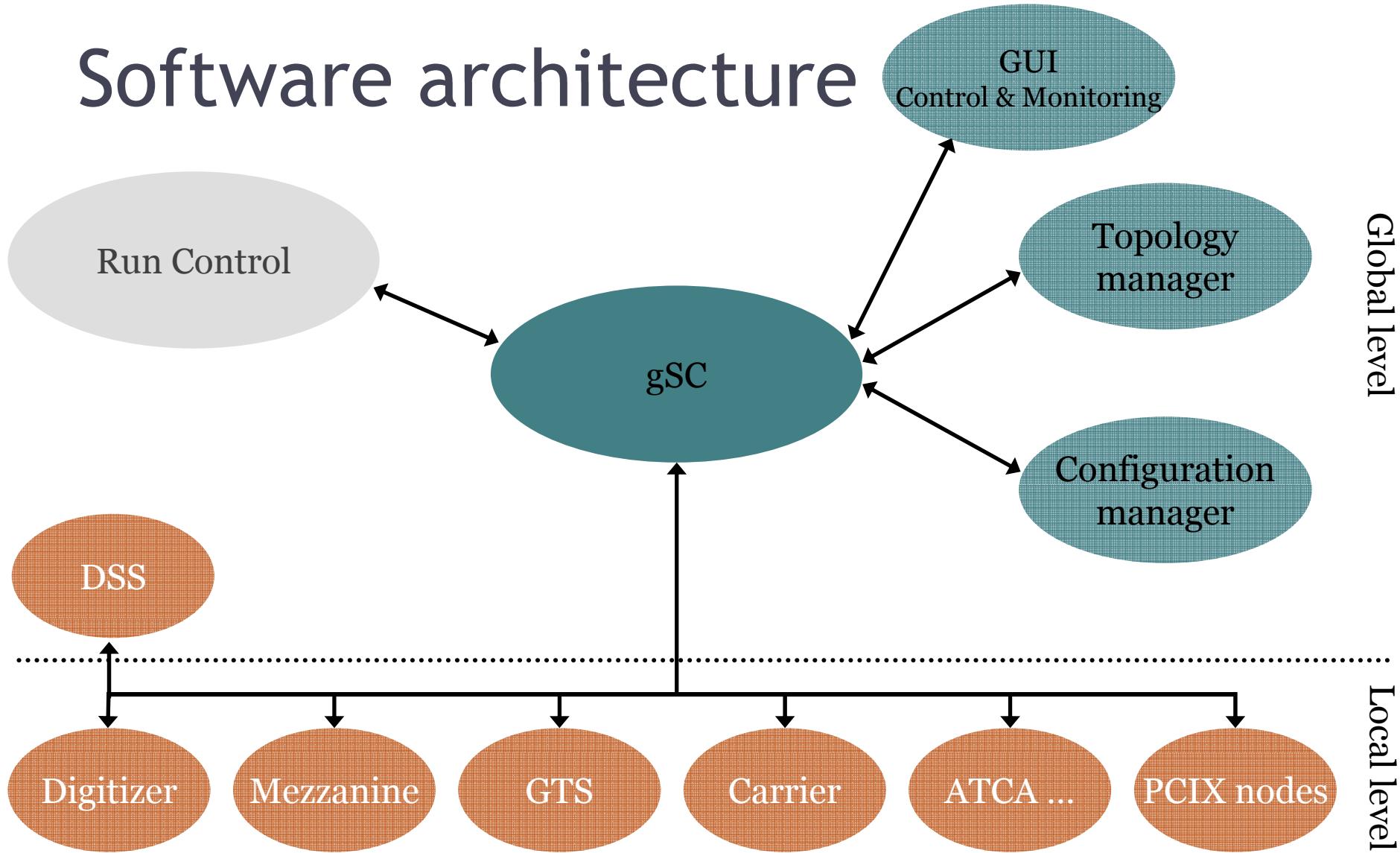
Status

- First meeting in Padova (10 June 2008)
- E. Legay coordinate SC task (April 2009)

Infrastructure design

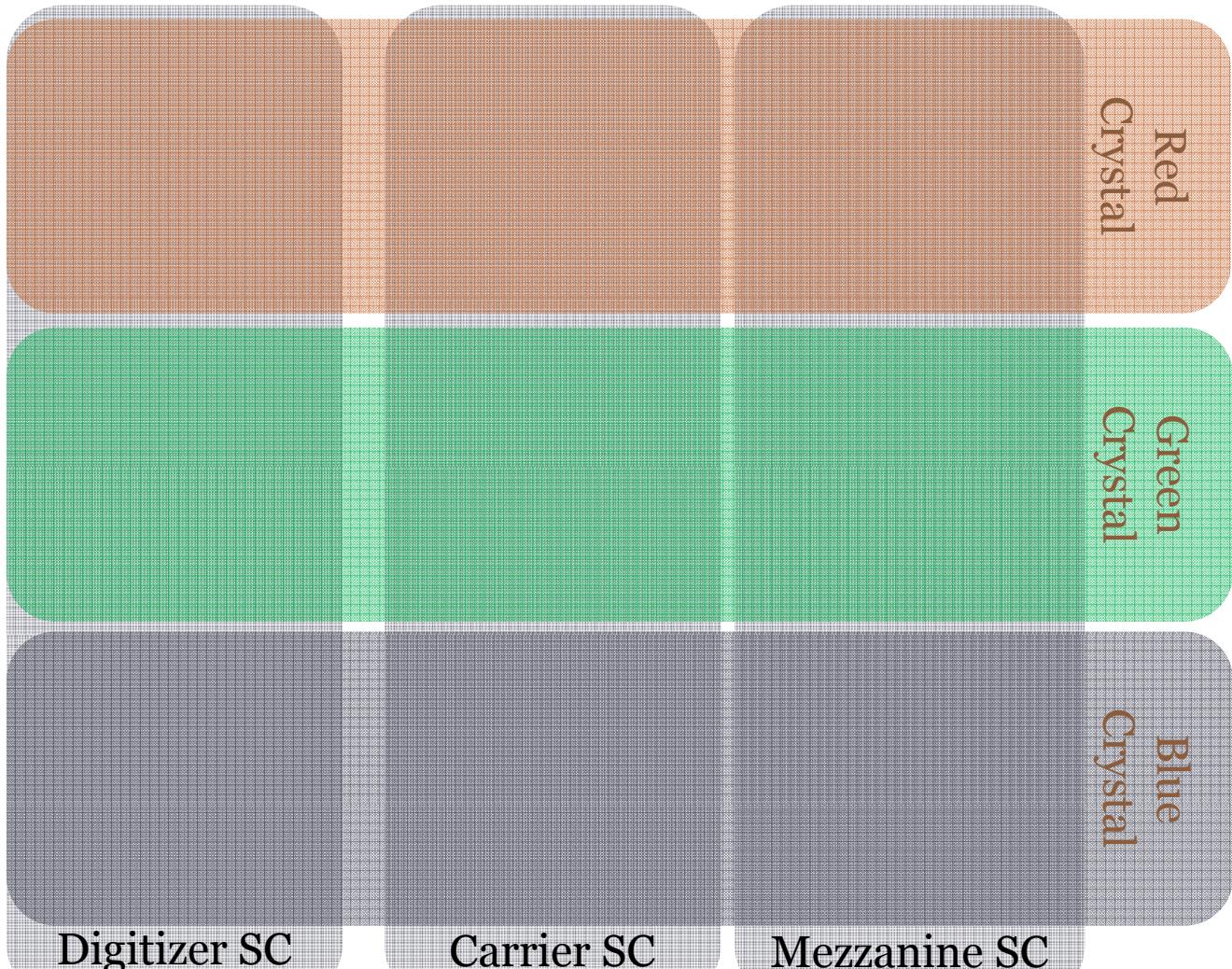
- Meeting at CSNSM (18-19 June 2009)
 - Terminology definition
 - GSC : Software providing gateway to local slow control.
 - Used by RC and non expert user
 - LSC : Software used to control electronic devices or to communicate with others control systems
 - Topology : Scheme of detector hardware tree
 - Configuration : Status of electronic device, value of parameters
 - Design of a global software architecture
 - Schedule for deliverable - first documentations

Software architecture

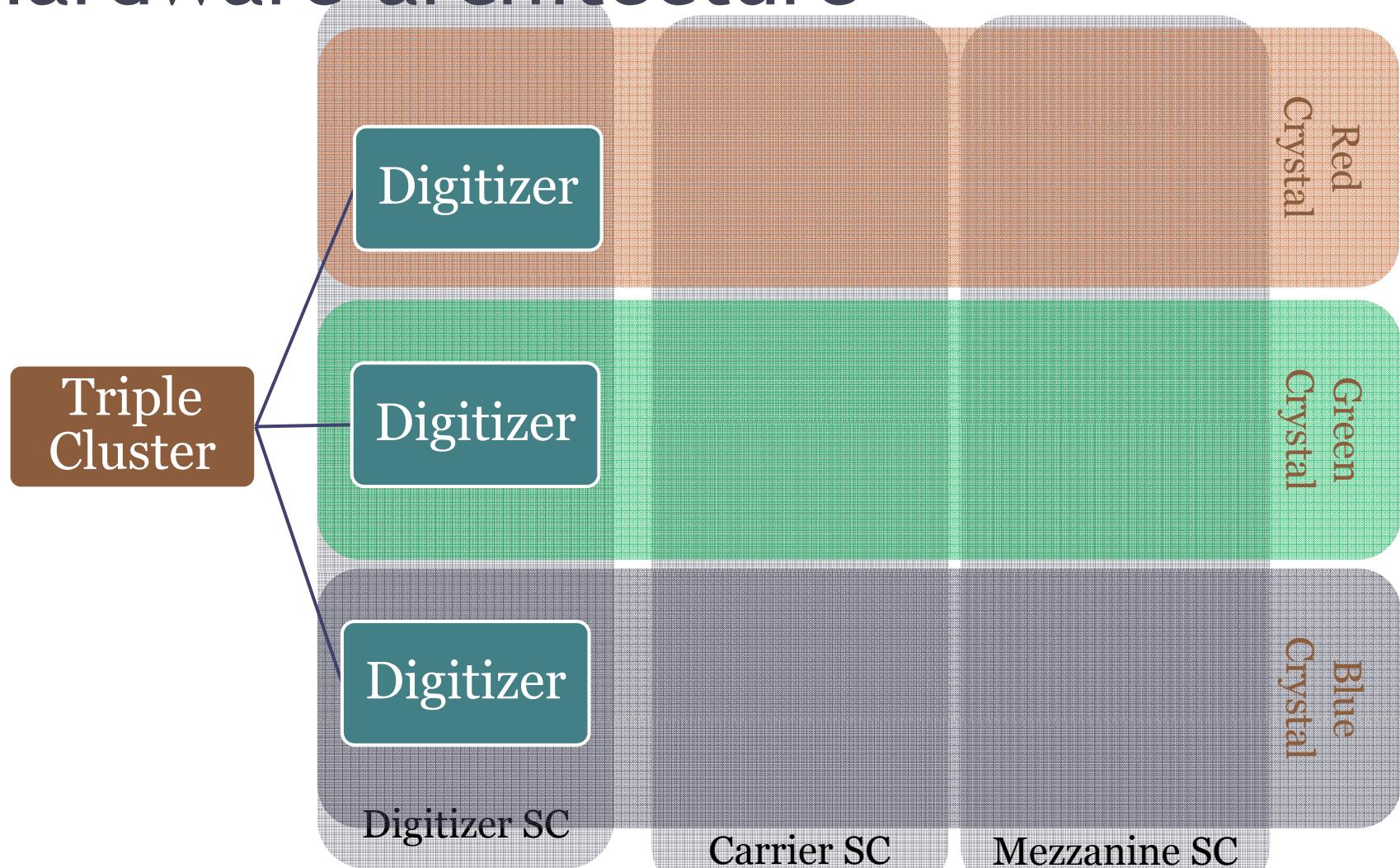


Hardware architecture

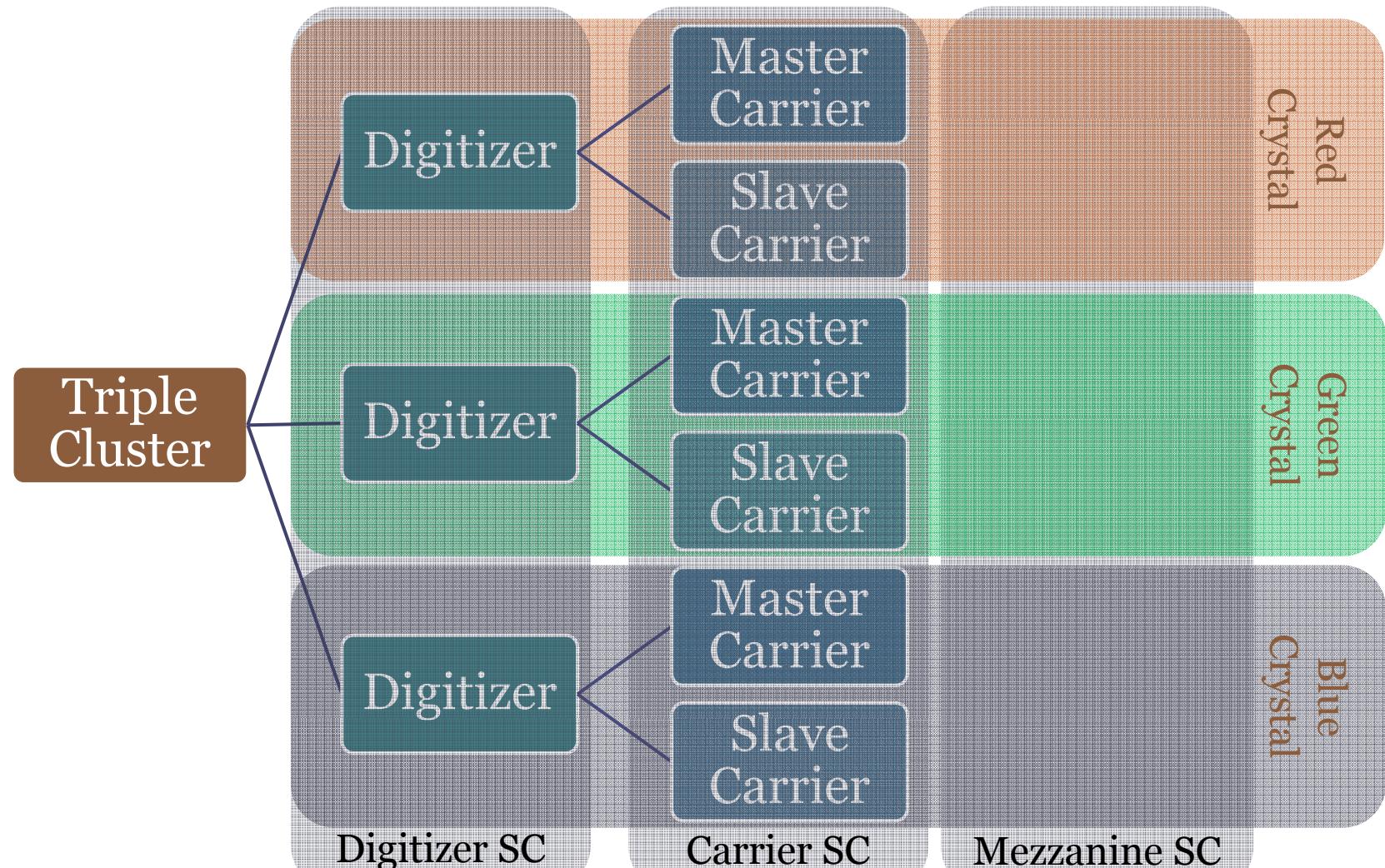
Triple
Cluster



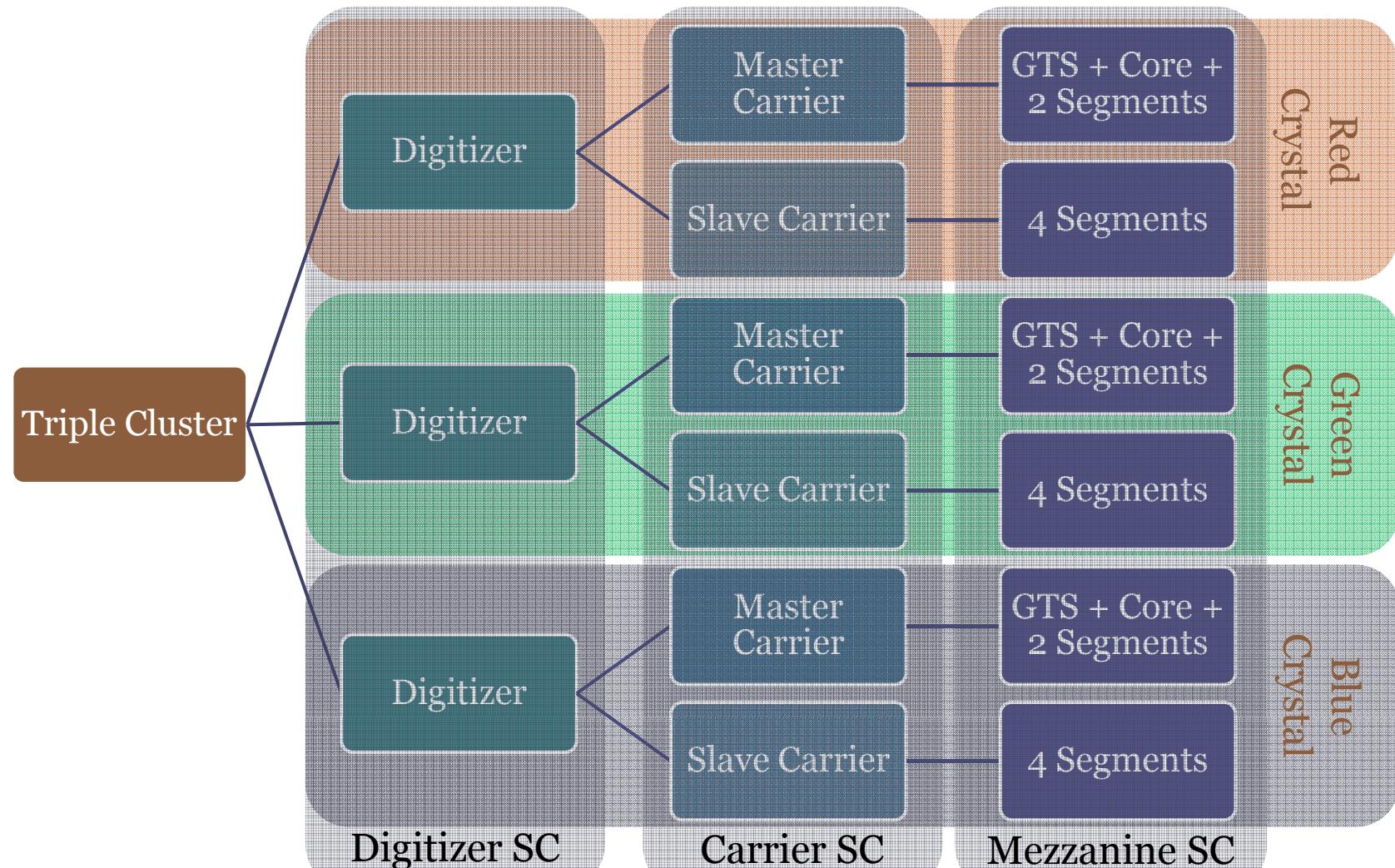
Hardware architecture



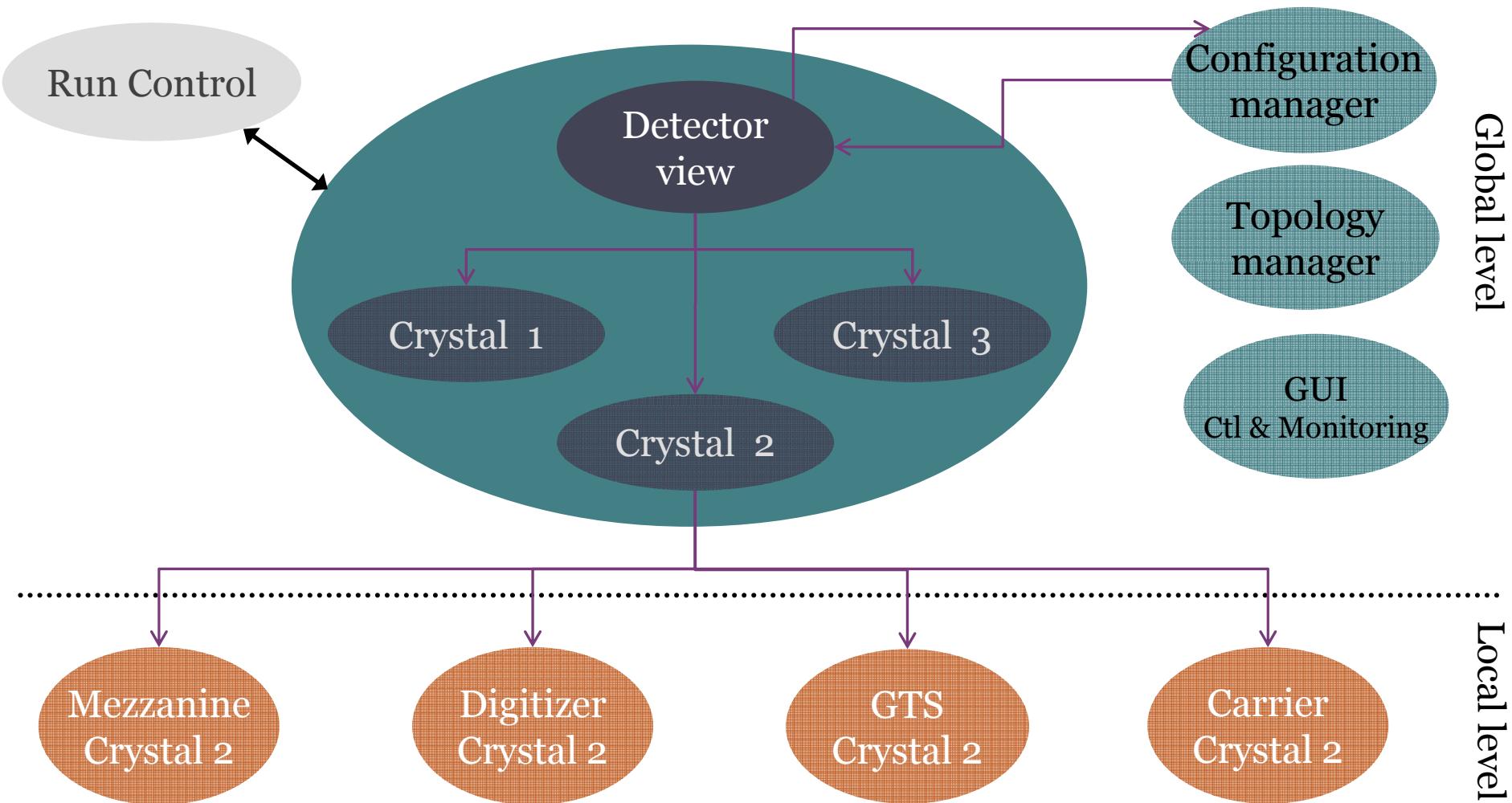
Hardware architecture



Hardware architecture



Software architecture - Zoom



People involved in global level

- Definition of wsdl used to send orders
 - In charge : V. Pucknell et al.
- Run Control
 - In charge : M. Gulmini, P. Molini
- Global Slow Control
 - In charge : N. Dosme, E. Legay
- Configuration manager
 - In charge : V. Pucknell
- Topology manager
 - In charge : L. Guevara
- GUI : Control and monitoring
 - In charge : ...

People involved at local level

- Digitizer
 - In charge : V. Pucknell
- Segment and Core mezzanine
 - In charge : N. Dosme, E. Legay, S. Perrier
- GTS system
 - In charge : M. Bellato
- Carrier
 - In charge : D. Bortolato
- ATCA crate
 - In charge : ...
- PCI nodes
 - In charge : ...

Interfaces

Mainly proposed by V. Pucknell

WSDL Slow Control interface

- Main functions
 - int DoReset (char *parameter, int *rc);
 - int DoSetUp (char *parameter, int *rc);
 - int DoStop (char *parameter, int *rc);
 - int DoGo (char *parameter, int *rc);
 - int DoOption (char *parameter, int *rc);
- Secondary functions
 - GetState, GetOption
 - GetCounters, GetRates
- Higher level functions
 - Under investigations

WSDL topology interface (draft)

- For Slow Control Software interactions
 - `int set_crystal_status (char* crystal; boolean status)`
 - `char* get_crystals ()`
 - `void* get_information (char* LSC_module; char* crystal)`
 - Return will depend of asking module
- For other database synchronizations
 - To define
- In progress ...

Topology manager

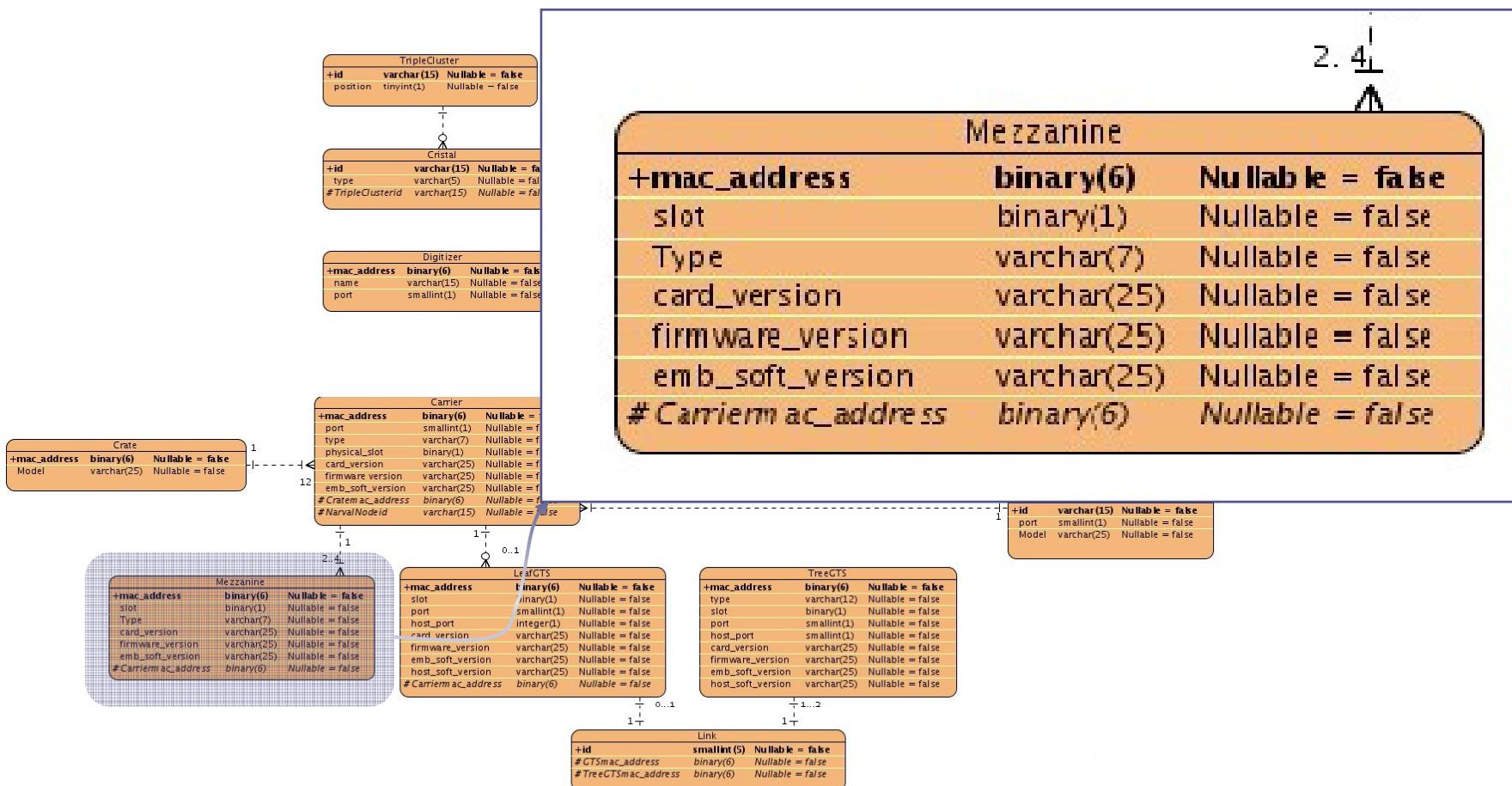
Luz Guevara – IPNO

Scheme of all connections between clusters, crystals,
electronics, and computers

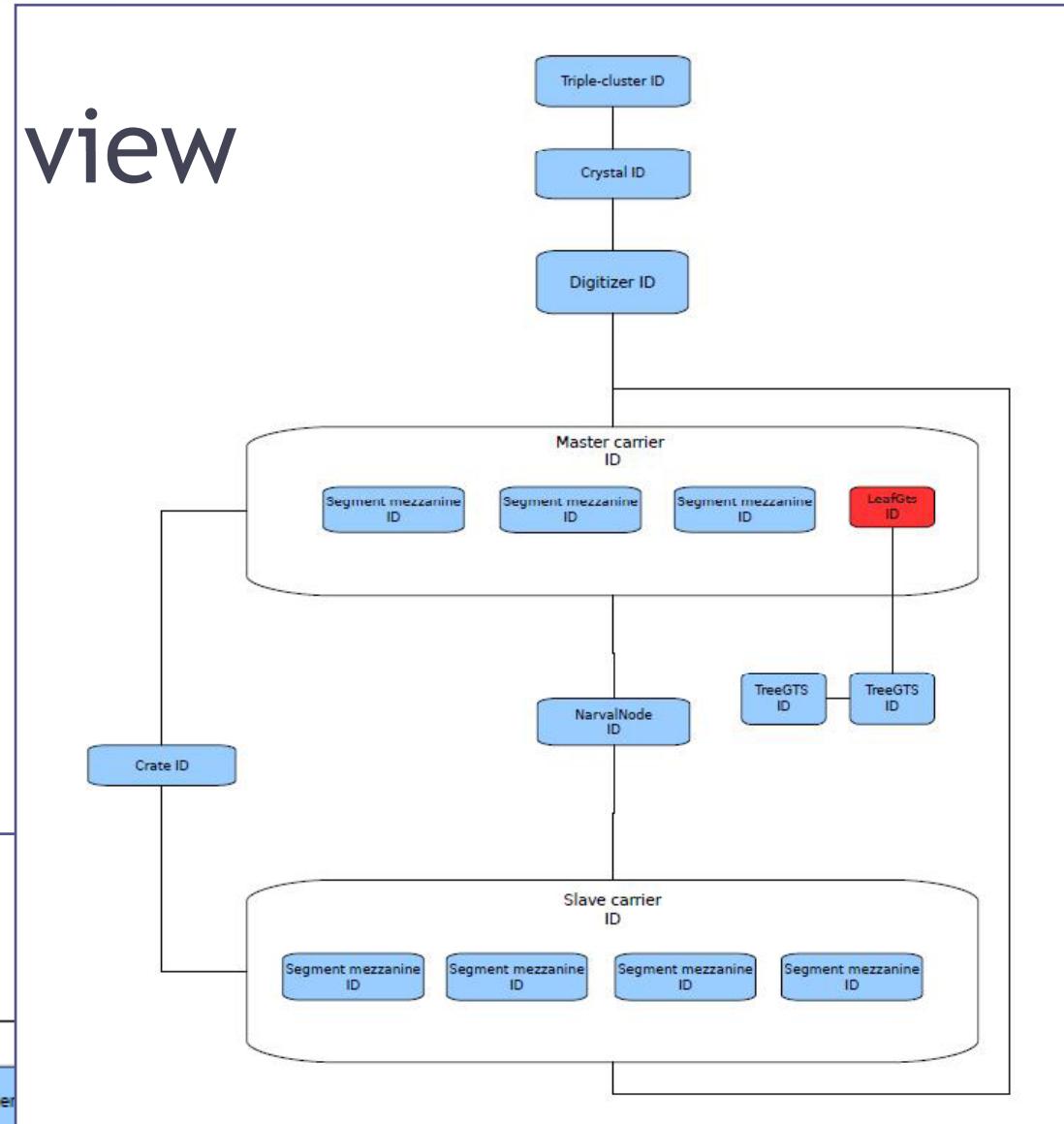
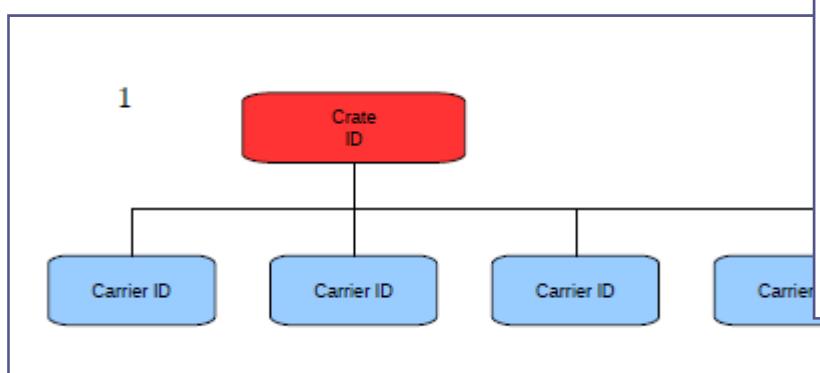
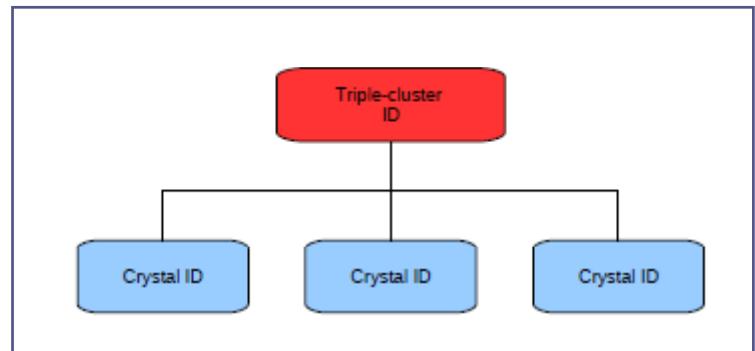
Basics operations

- Updating database
 - Manual / Bar code
 - Automatic detection
- Tree visualisation
 - View per detector / crystal / card
- Topology check

Topology description



Hardware tree view



Meeting of 19th January 2010

- Status
- Use case discussion
- Planning

Minutes available soon on the DAQ website

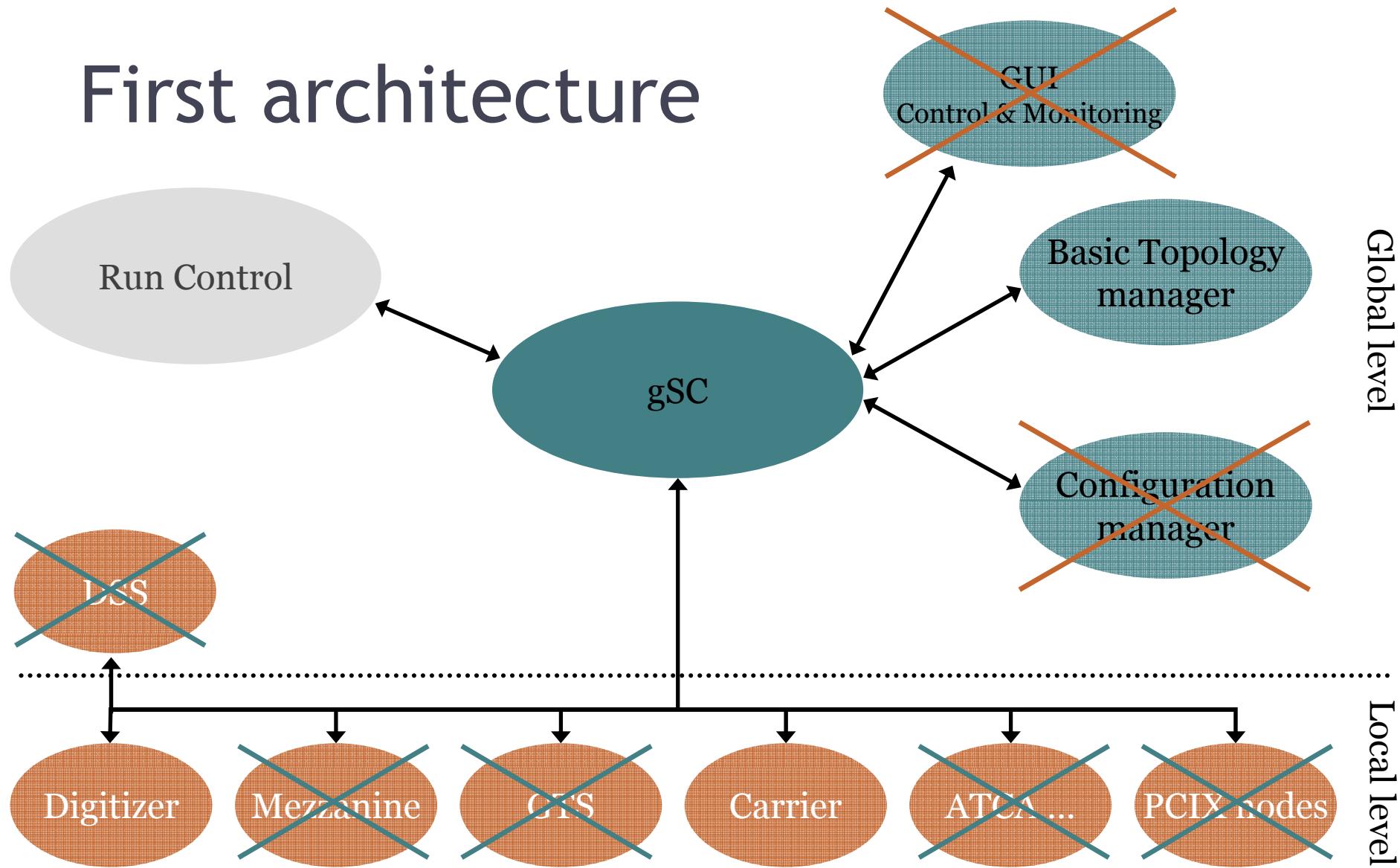
Status GSC software

- Configuration manager
 - Adaptation of Vic's software
 - More in Vic's presentation
- Topology manager
 - development in progress
- GSC : soon ...

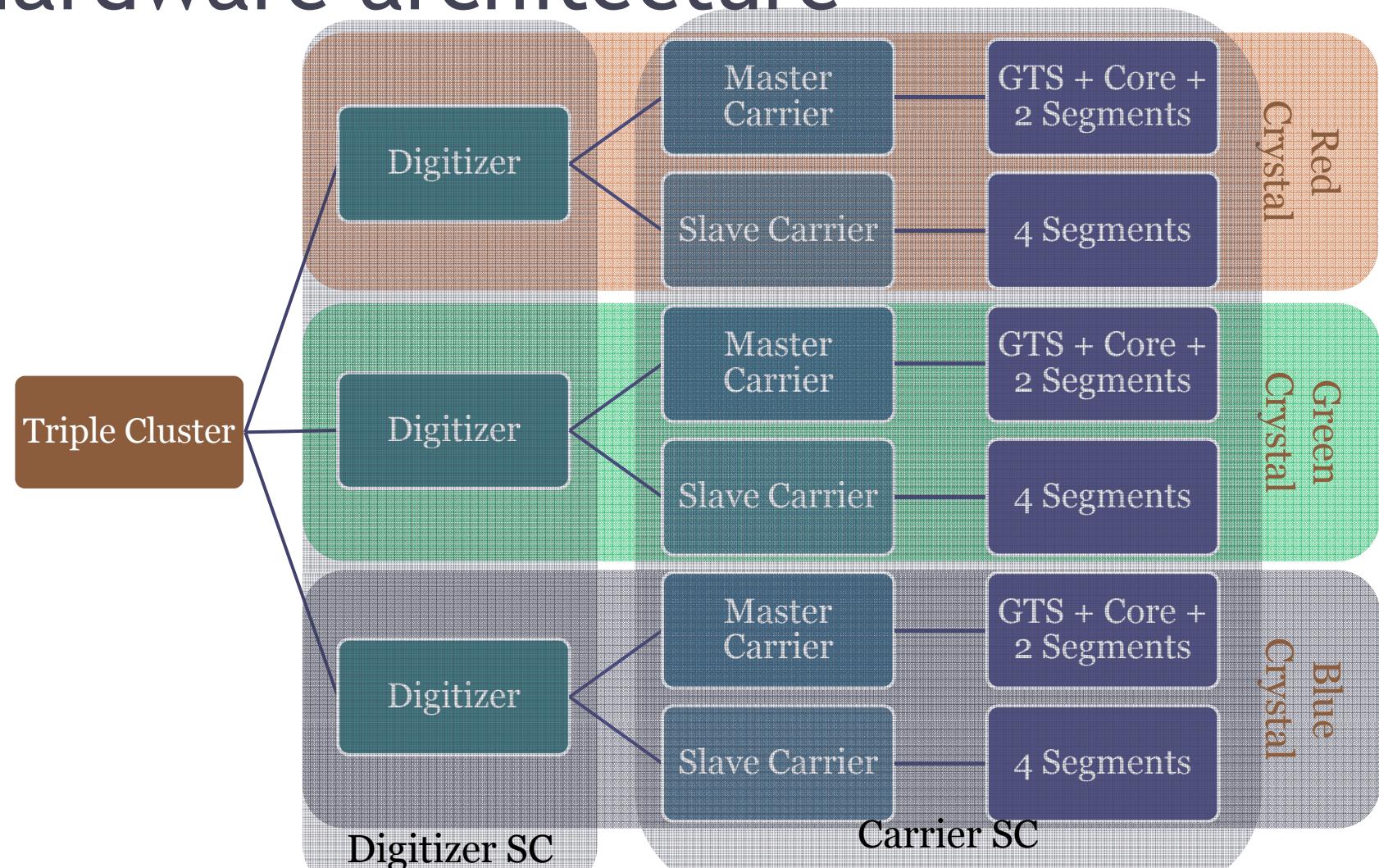
Status LSC software

- Digitizer
 - Software upgrade 19th January 2010
 - More in Vic's presentation
- Carrier
 - Core development nearly finished
 - GUI to improve and test
- Orsay mezzanine
 - Core and GUI development finished
 - Software need real integration tests
 - Incompatibility between temporary VHDL code and embedded Linux
- GTS
 - Task taken up by Marco Bellato during Autumn 2009

First architecture

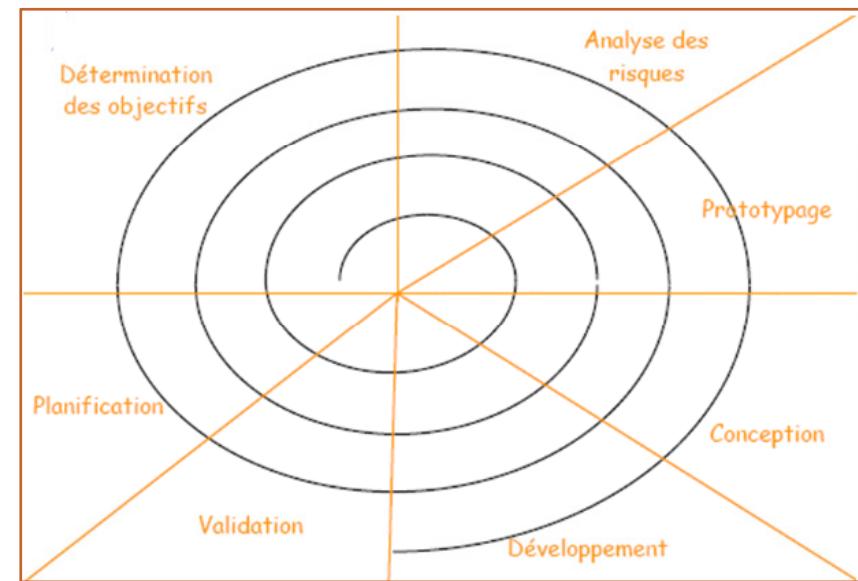


Hardware architecture



Working method

- Spiral code development cycle
 - Short term goal specification
 - Development phase
 - Expert integration
 - Debug phase
 - Scientific integration
- Adding features step by step
 - Electronic control
 - Mezzanine slow control
 - Future version of existing card ?
 - New designed card ?
 - New functionality
 - Configuration management
 - Logging facility
 - More complex topology request
 - GUI



Future

Schedule

- June 2010
 - Expert step integration phase
 - Definition of features to implement for new development cycle
 - New planning
- September 2010
 - User step integration phase

Problems

- GUIs
 - Expert level still developed with LSC
 - Common GUI not yet planned
 - No global indicator
 - No single point of access of whole electronics
 - No GUI for configuration manager
- Missing manpower ?
 - ATCA crate
 - PCIx nodes
 - DSS communication
 - GUI
- Electronic roadmap ?