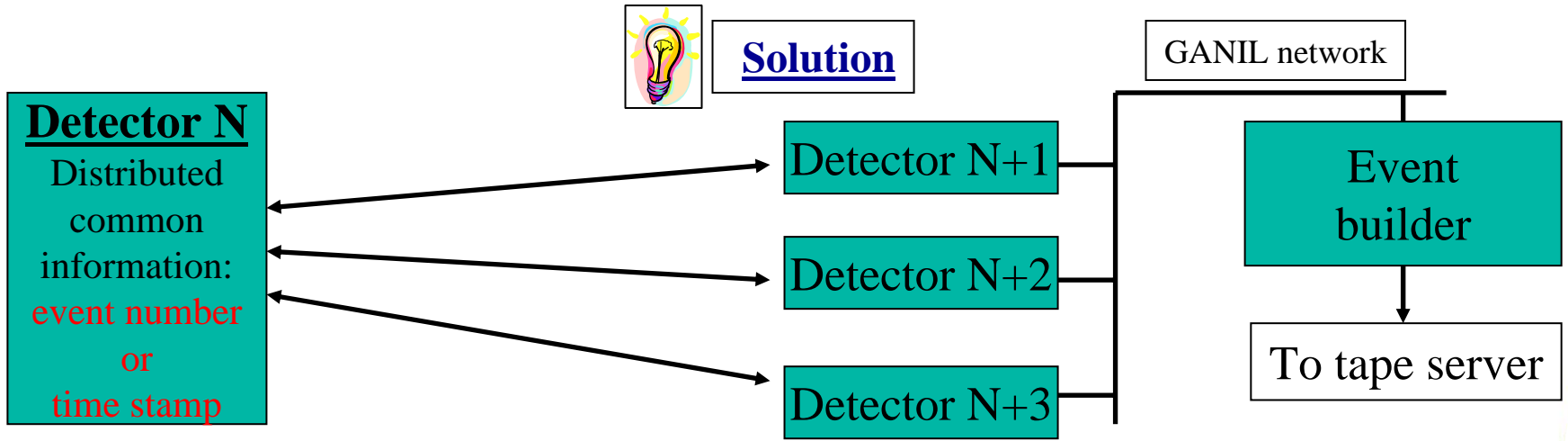
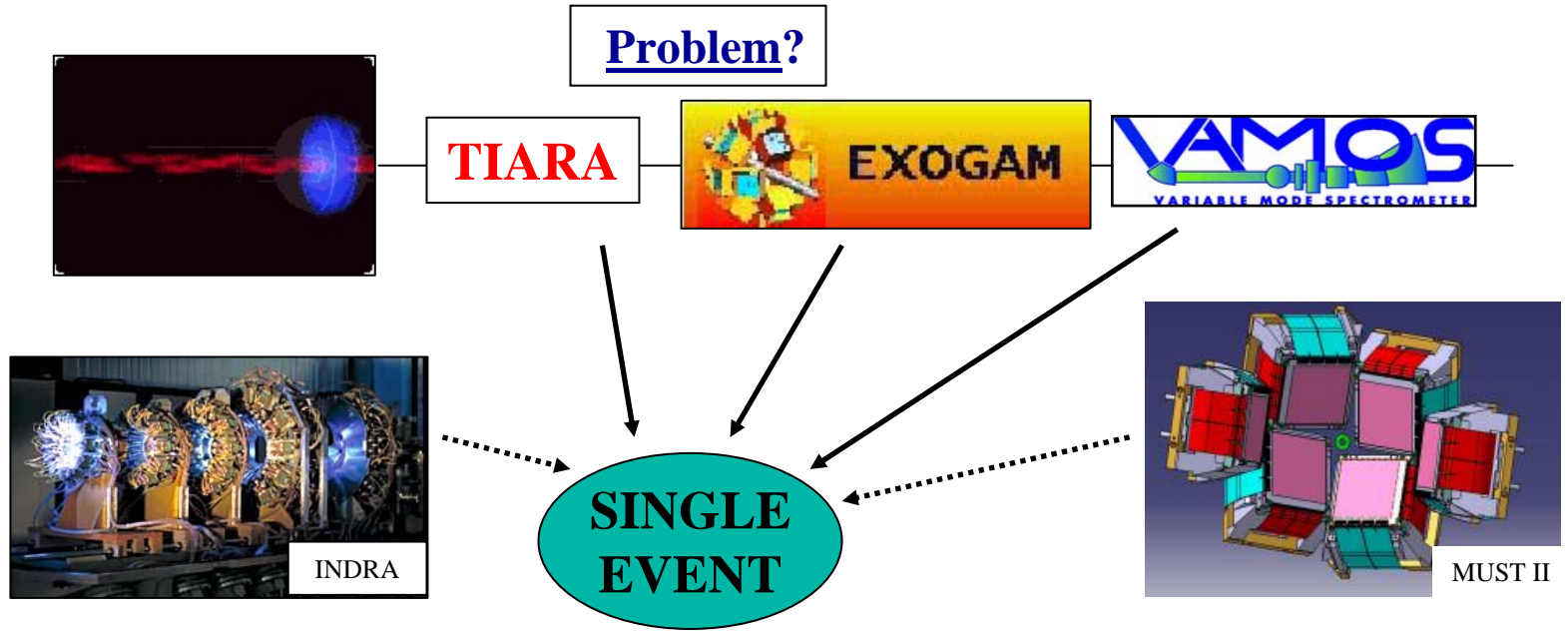
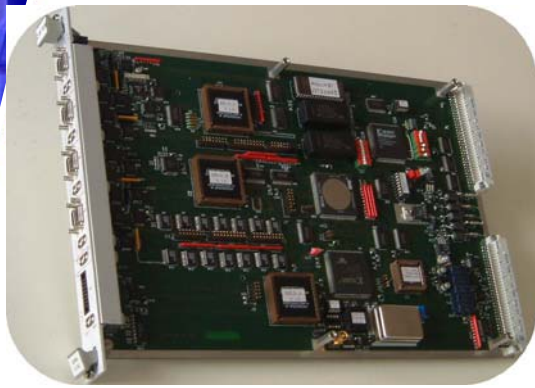


Detector Coupling with CENTRUM



Detector Coupling with CENTRUM



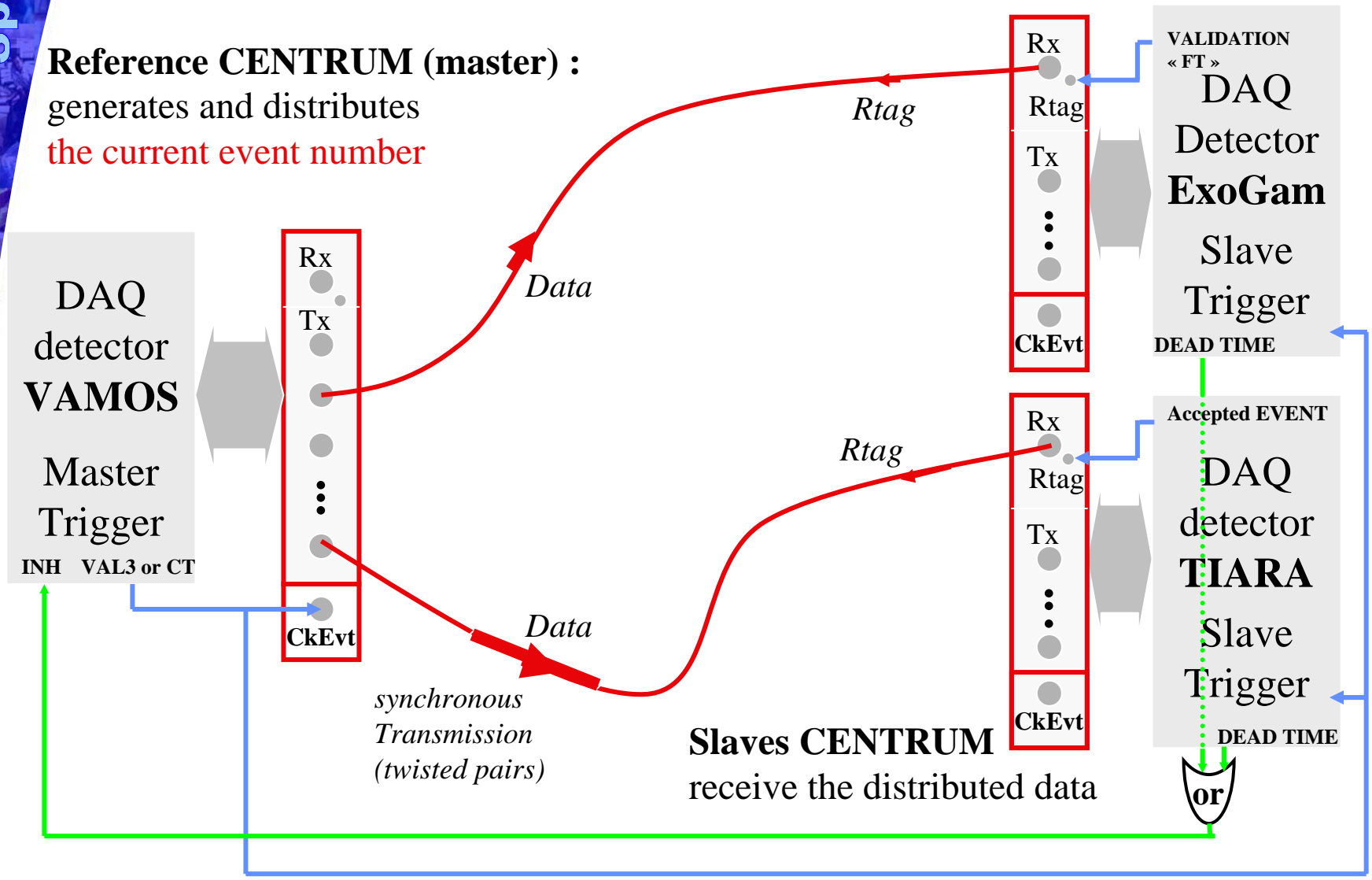
VXI-C **CENTRUM** module

Clock & Event Number Transmitter Receiver Universal Module

Main features:

- ✚ Same module for both ends
- ✚ 32 bits event counter
 - clocked by VXI TTLTRG signal or via front panel NIM input
 - check for EXOGAM event number validity
- ✚ 48 bits absolute clock @ 100 MHz
 - 1 month experiment
 - TCXO stability : 1 ppm
- ✚ 8 front panel serial channels
 - 1 receiver channel (when used as slave module)
 - programmable delay on each tagging signal input (up to 500 ns)
 - 5 short distance transmitter channels (up to 25 meters)
 - 2 long distance transmitter channels (up to 100 meters)

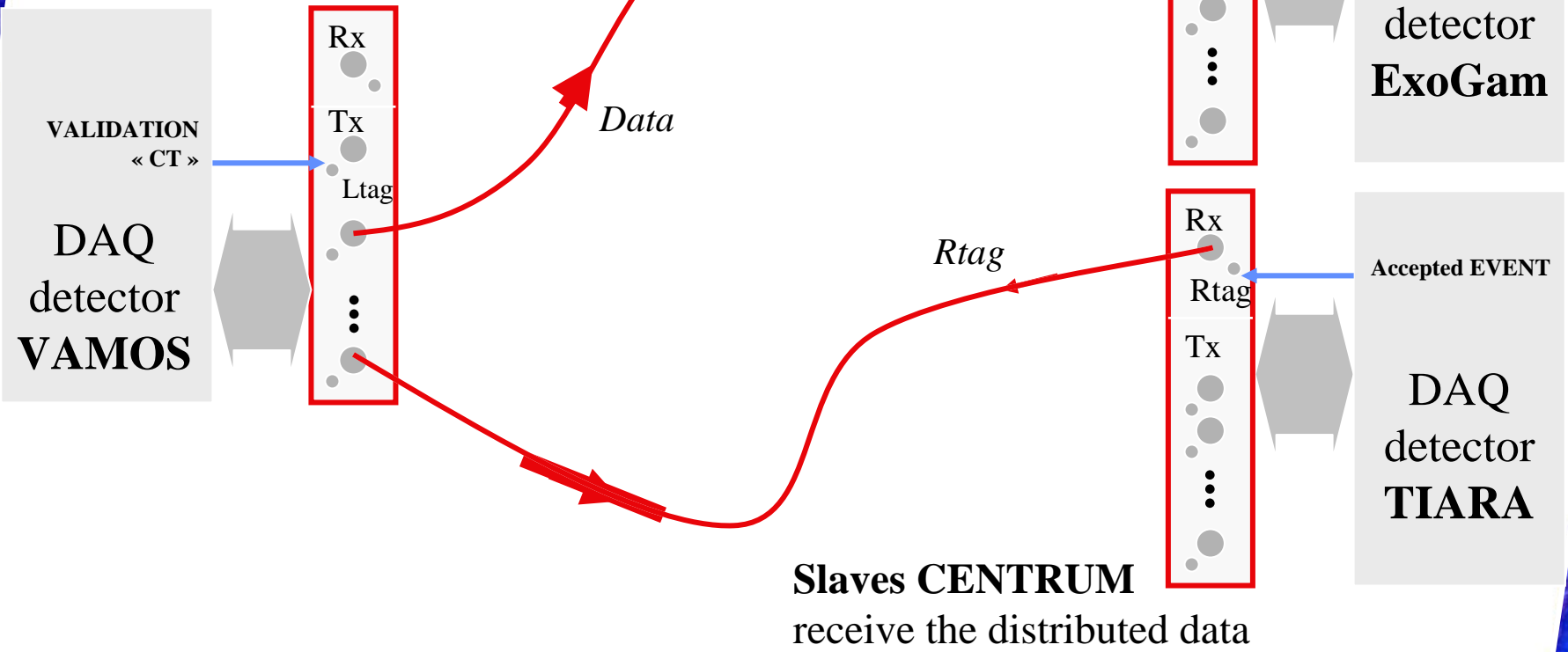
Detector Coupling with CENTRUM



dead time = at the worst, the slowest DAQ dead time period

Detector Coupling with CENTRUM

Reference CENTRUM (master) :
centralizes the universal clock and
distributes the **time stamps**



Slaves CENTRUM
receive the distributed data

No interlock, cabling is simpler but software algorithm is more complicated

Detector Coupling with CENTRUM

Fully integrated in the GANIL DAQ with the "DAS" setup GUI

GANIL DAS v10.07 [Language : français(fr)] gamer

Fichier Utilitaires Mise à jour Acquisition Visualisation Réserve Aide

Ajouter un chassis Supprimer chassis Offline

VXI_1

VXI Chassis : 1 Cpu : ganlo26

Ajouter module Supprimer module Déplacer module Changer CPU

INSPECTION GAMER_1_4 ADC ADC2 MASTER_CENTRUM

[MASTER_CENTRUM Slot(8), Type(CENTRUM)]

Interface Utilisateur Interface Générique Paramètres

	TX1 MUST II	TX2 VAMOS	TX3 EXOGAM	TX4 TIARA	TX5	TX6	TX7
Maître	ON	ON	ON	ON	OFF	OFF	OFF
Mode	Corré	Corré	Corré	Corré	Seul	Seul	Seul
Local	ON	OFF	OFF	OFF	OFF	OFF	OFF
Envoyé...	Si touché	Si touché	Si touché	Si touché	Si touché	Si touché	Si touché
Retard du TAG	0 ns	0 ns	0 ns	0 ns	0 ns	0 ns	0 ns

Horloge Universelle

Entrée Horloge en face avant

Signal VXIGO

Pré-chargement

Raz Horloge

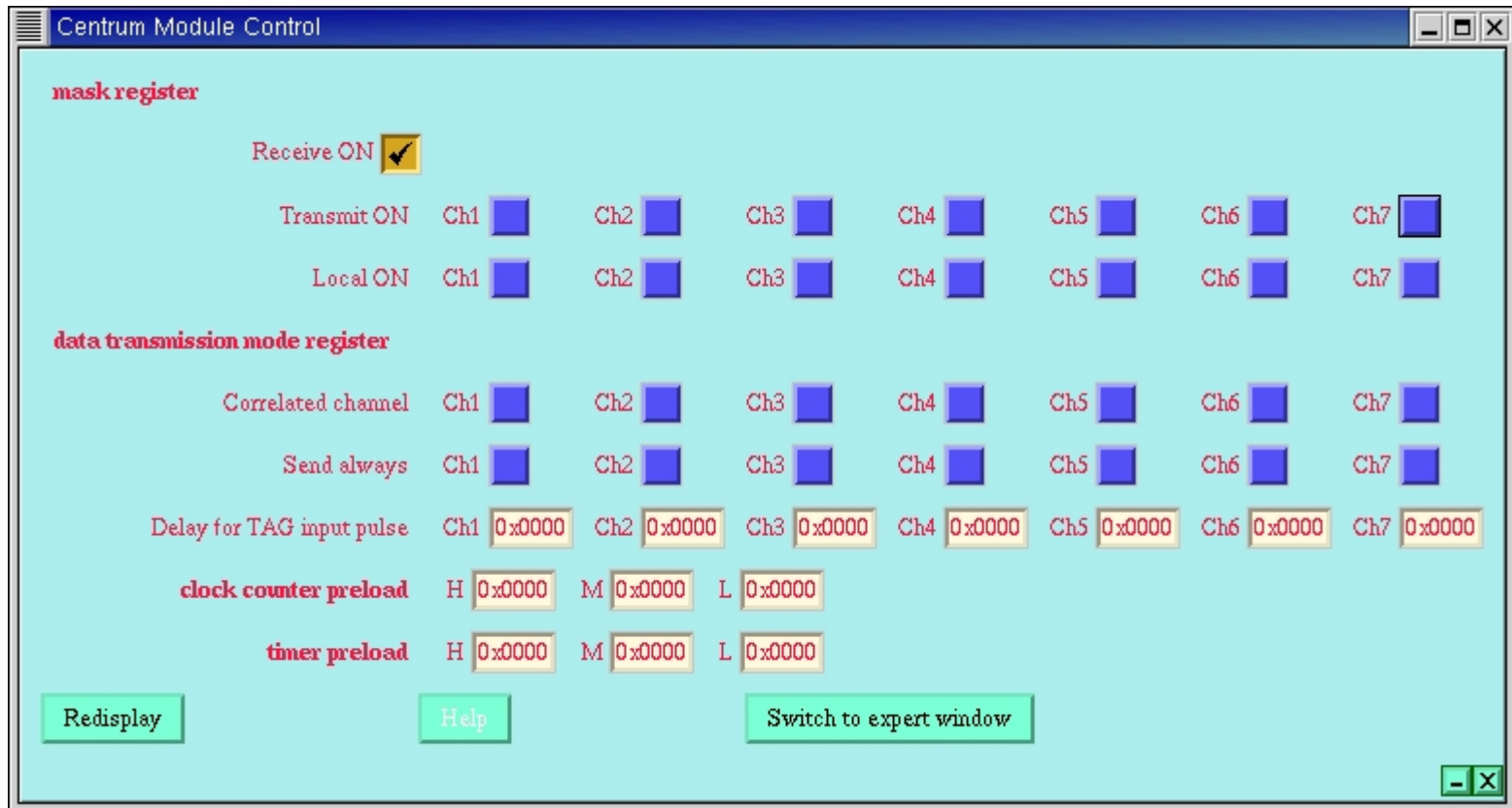
Expert Label Réserve

Modifié jeudi 8 novembre 2007 11:11:01 MASTER_CENTRUM : Ajouter module < gamer.das >

Quad correlated DAQ in common dead time using the event number
(Time stamping available)

Detector Coupling with CENTRUM

and in the « Midas » GUI (ExoGam & TIARA)



CENTRUM backplane readout modes

- ✚ VME (standard, extended)
- ✚ REN-Readout cycle

MERGER software

- ✚ Event builder
- ✚ Written in C++
- ✚ Runs
 - on VME PowerPC (Lynx OS)
 - soon on PC with LINUX

Conclusion

- # Exogam + VAMOS always coupled using one of the two methods
- # Success of other coupling:
 - SPEG + MUST II
 - INDRA + VAMOS
 - EXOGAM + VAMOS + TIARA
- # And recently MUST II + VAMOS + TIARA + EXOGAM !!!
- # Tomorrow: Extension of CENTRUM and MERGER with GAMER (VXI-C module) and ATOM's mezzanines to time-stamp individual channels.
 - ⇒ used as a first step on MUVI board for MUST II in autonomous mode and MUSETT detector.