



# AGATA NEWS



# **Topology Manager**

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### My role for AGATA?



**Integration of new electronics** 

#### **Pace\_Stare**



In the AGATA Phase 2 acquisition chain





Topology Manager describe the structure of the electronics for a system



Example of TM architecture

- Generate Acquisition Topology
- Generate Configuration files for the different slow control







Manage sending start/stop messages to the electronics based on buffer occupancy.



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## Results of buffer monitoring with Satre card



Back Pressure Diagram of Stare card with SQM\_SQM2ADF\_BlackHole actors



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Back Pressure Diagram of Stare card with SQM\_SQM2ADF\_BlackHole actors



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## Results of buffer monitoring with emulator





Validation of the acquisition chain's proper functioning by replacing Stare with an emulator and getting correct back pressure results





### **Automating the Acquisition Process**

Generate, via TM, the scripts necessary to automate the launch of the acquisition for Stare and emulator running in parallel + adding an option « Data\_From » to choose whether the data comes from the emulator, PACE, STARE, digitizer or crystal

Clusters	Position	Crystals	Color	Data_From	Digitizer	GGP	Pace	Stare	Carrier Master	GTS	<b>Carrier Slave</b>	Anode
atc01	11	<u>a010</u>	Α	XXX	XXX	<u>ggp081</u>	XXX	XXX	XXX	33	XXX	anode81
		<u>b011</u>	В	XXX	XXX	<u>ggp082</u>	XXX	XXX	XXX	34	XXX	anode82
		<u>c009</u>	С	XXX	XXX	<u>ggp083</u>	XXX	XXX	XXX	35	XXX	anode83
atc03	8	<u>a002</u>	Α	XXX	XXX	XXX	XXX	XXX	carrier-005	<u>gts-171</u>	XXX	anode55
		<u>b007</u>	В	XXX	XXX	<u>ggp056</u>	XXX	XXX	XXX	25	XXX	anode56
		<u>c007</u>	С	FROMSTARE	XXX	XXX	<u>pace01</u>	stare013-0	XXX	151	XXX	<u>c6400-09.i1p1</u>
atc06	6	<u>a008</u>	Α	FROMSTARE	XXX	XXX	<u>pace02</u>	<u>stare013-1</u>	XXX	152	XXX	<u>c6400-09.i2p1</u>
		<u>b009</u>	В	FROMEMULATOR	XXX	XXX	<u>pace03</u>	stare003-0	XXX	153	XXX	<u>c6400-04.i1p1</u>
		<u>c002</u>	С	FROMSTARE	XXX	XXX	pace04	<u>stare001-0</u>	XXX	154	XXX	<u>c6400-05.i3p1</u>

Set up an acquisition with the SQM2ADF actor and test the acquisition process : - Emulateur --> SQM --> SQM2ADF --> BlackHole ok ! - Stare --> SQM --> SQM2ADF --> BlackHole ok ! universite W Universite





- Long-term stability of topologies (~12h?).
- Behavior in case of back pressure.
- Behavior with multiple streams on the same machine (2 parallel chains on c6400-09).
- Testing a topology distributed across multiple machines: (2 parallel chains with 2 SQMs on c6400-09 and 2 SQM2ADF+BlackHole on c6400-XX).
- Based on the results, test the system's limits (how many SQMs can run in parallel on a single machine?).
- Implement an acquisition for a full triple cluster (3 crystals) with processing (Source -> SQM -> SQM2ADF -> Preprocessing -> PSA -> BasicAFC)





## **Thank you for your attention**