Last updated: 2 May 2002

Content and format of the L2a Message - anti-proposal

(Proposal approved by the ALICE Technical Board on 14 May 2002)

Introduction

A somewhat different *proposal* was presented, discussed and nearly approved in the last Technical Board meeting (23 April 2002); "nearly" - because there were some uncertainties about the requirements of the HLT.

In the aftermath of the meeting, not only that the "uncertainties" themselves became uncertain: "... answer to the question who funds the HLT (local area) network..." (Pierre, according to Orlando's message of 23 April); or "ascertain that the traffic (on the HLT network) is tolerable..." (Chris, in his message on the same day); but, in the meantime, the DAQ group found out that the presence of the trigger-class status information in the raw event data could enhance the processing throughput (new simulation results related to rare events, *etc.*) and requested that, contrary to the previous proposal, the class status should be included in the ***L2a*** *Message*.

As a result, the Technical Board now faces two contradicting options:

- the *original proposal* brings the benefits of a reduced hardware overhead to both the CTP and, particularly so, to all the 24 sub-detectors, the benefits that should not be waived easily;
- this *anti-proposal* satisfies DAQ's new requirements, but at a cost.

The "cost" should be, and, surely, will be evaluated against the understood physics gains of the new scheme. Also, the necessity of the scheme should be judged in the presence of an alternative option - the use of the HLT local area network: it is going to be there; it is going to be a real network, rather than an improvised connection over the TTC, the front end electronics and the DDLs - all sound and reliable systems, but developed for very different applications; it will certainly have sufficient throughput; it will be a commercial product, easily and automatically upgradeable; *etc.* .

The decision about the content of the ***L2a*** *Message* is on the critical path of the CTP/LTU development schedule. At this point in time, it appears that *"any decision is better than no decision"* and, in an attempt to speed up the procedure, this (anti) proposal provides all the technical details of the alternative scheme. Instead of considering only the original proposal, which, in case of rejection, would lead to new iterations and further delays, the Technical Board, in its next meeting on the 14th of May, could make a choice between the two possible options, a choice based on their intrinsic worth and system implications, and, simultaneously, approve the corresponding technical implementation, specified in either the original document or in this *anti-proposal*.

Anti-proposal

***L2a Message* format:**

Word 1:

***L2a** header address*	4 bits	
BCID[12..1]	12 bits	

Word 2:

***L2a** data address*	4 bits	
OrbitID[24..13]	12 bits	

Word 3:

***L2a** data address*	4 bits	
OrbitID[12..1]	12 bits	

Word 4:

***L2a** data address*	4 bits	
Spare bits	2 bits	
CIT	1 bit	
L2Sw	1 bit	
L2Cluster[6..1]	6 bits	**1*
L2Class[50..49]	2 bits	**1*

Word 5:

***L2a** data address*	4 bits	
L2Class[48..37]	12 bits	**2*

Word 6:

***L2a** data address*	4 bits	
L2Class[36..25]	12 bits	**3*

Word 7:

***L2a** data address*	4 bits	
L2Class[24..13]	12 bits	**1*

Word 8:

***L2a** data address*	4 bits	
L2Class[12..1]	12 bits	**1*

**1* - Not used in case of a *Software Trigger*; reads 0.

2* - In case of a Software Trigger - detector readout status **L2Detector[24..13].

3* - In case of a Software Trigger - detector readout status **L2Detector[12..1].

Abbreviations:

BCID[12..1]	- *Bunch-crossing number* (12 bits, part of the *Event Identifier*).
OrbitID[24..1]	-*Orbit number* (24 bits, part of the *Event Identifier*).
ClT	- *Calibration Trigger* flag.
L2SwC	- *Software Class L2 trigger* status.
L2Cluster[6..1]	- *Cluster [6..1] L2 trigger* status flag.
L2Class[50..1]	- *Class [50..1] L2 trigger* status flag.
L2Detector[24..1]	- *Detector [24..1] L2 trigger* status flag.