Online Event Dump Program

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Aim

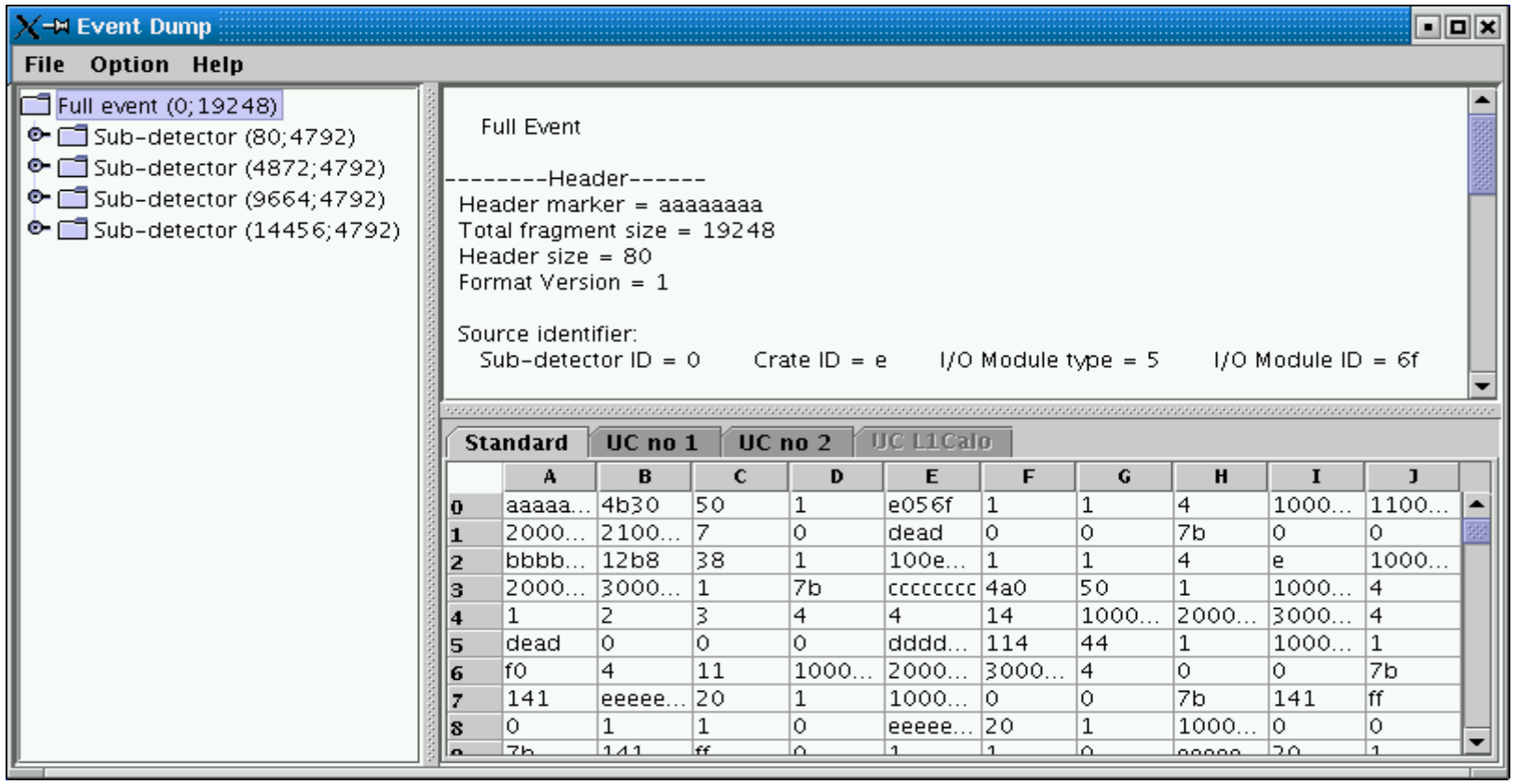
Investigating the event dump component of the online software with the aim of customizing it to display event fragments in a comprehensible way.

Online Event Dump

- **Maintained** by Mikhail Mineev (mineev@jinr.ru)
- **Provides** some general components to render fragment data through the use of drop down menus, trees and tables.

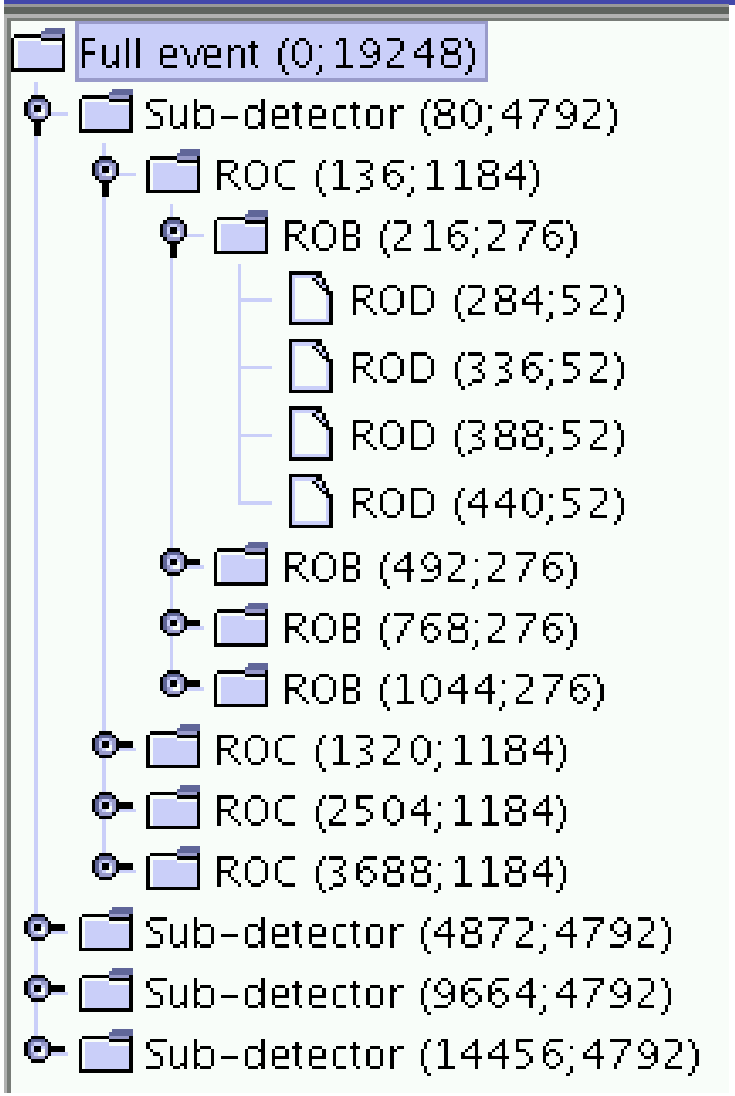
What Already Exists...

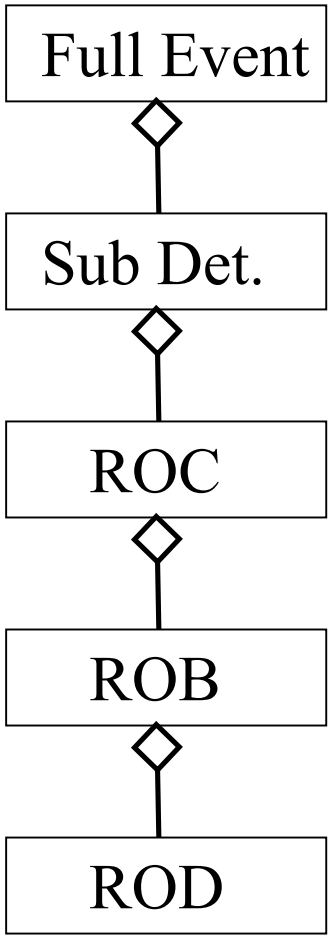
- **ScrollPanes** Tree View of the event, Full dump of data fragments, user-defined panels



	A	B	C	D	E	F	G	H	I	J
0	aaaaa...	4b30	50	1	e056f	1	1	4	1000...	1100...
1	2000...	2100...	7	0	dead	0	0	7b	0	0
2	bbbb...	12b8	38	1	100e...	1	1	4	e	1000...
3	2000...	3000...	1	7b	cccccccc	4a0	50	1	1000...	4
4	1	2	3	4	4	14	1000...	2000...	3000...	4
5	dead	0	0	0	dddd...	114	44	1	1000...	1
6	f0	4	11	1000...	2000...	3000...	4	0	0	7b
7	141	eeeee...	20	1	1000...	0	0	7b	141	ff
8	0	1	1	0	eeeee...	20	1	1000...	0	0
9	7b	141	ff	0	1	1	0	eeeee	20	1

What Already Exists...





- Tree provides an effective representation of the data structure such as fragment aggregation

Standard Display Panels

Standard | UC no 1 | UC no 2 | UC L1Calo

	A	B	C	D	E	F	G	H	I	J
0	cccccccc	4a0	50	1	10000404	4	1	2	3	4
1	4	14	1000059	200009e	30000e3	4	dead	0	0	0
2	dddddddd	114	44	1	10000200	1	f0	4	11	100001e
3	200002b	3000038	4	0	0	7b	141	eeeeeeee	20	1
4	10000900	0	0	7b	141	ff	0	1	1	0
5	eeeeeeee	20	1	10000901	0	0	7b	141	ff	0
6	1	1	0	eeeeeeee	20	1	10000902	0	0	7b
7	141	ff	0	1	1	0	eeeeeeee	20	1	10000903
8	0	0	7b	141	ff	0	1	1	0	dddddddd
9	114	44	1	10000201	1	f0	4	11	100001e	200002b
10	3000038	4	0	0	7b	141	eeeeeeee	20	1	10000900
11	0	0	7b	141	ff	0	1	1	0	eeeeeeee
12	20	1	10000901	0	0	7b	141	ff	0	1
13	1	0	eeeeeeee	20	1	10000902	0	0	7b	141
14	ff	0	1	1	0	eeeeeeee	20	1	10000903	0
15	0	7b	141	ff	0	1	1	0	dddddddd	114
16	44	1	10000202	1	f0	4	11	100001e	200002b	3000038
17	4	0	0	7b	141	eeeeeeee	20	1	10000900	0
18	0	7b	141	ff	0	1	1	0	eeeeeeee	20
19	1	10000901	0	0	7b	141	ff	0	1	1
20	0	eeeeeeee	20	1	10000902	0	0	7b	141	ff
21	0	1	1	0	eeeeeeee	20	1	10000903	0	0
22	7b	141	ff	0	1	1	0	dddddddd	114	44
23	1	10000203	1	f0	4	11	100001e	200002b	3000038	4
24	0	0	7b	141	eeeeeeee	20	1	10000900	0	0
25	7b	141	ff	0	1	1	0	eeeeeeee	20	1
26	10000901	0	0	7b	141	ff	0	1	1	0
27	eeeeeeee	20	1	10000902	0	0	7b	141	ff	0
28	1	1	0	eeeeeeee	20	1	10000903	0	0	7b
29	141	ff	0	1	1	0				

Easy to identify header markers

ROC cccccccc

ROB dddddddd

ROD eeeeeeee

Nothing provided to unpack data words

Pros and Cons

- **Desirable Features** data organized in a tree hexadecimal/binary format supported
- **Undesirable Features**
  - full event dump can be rather long and difficult to read.
  - Hard to find the information you want.
  - It does not know how to render L1Calo Event Data!

… a need to provide our own customized user panel

Starting Point

- Technical Information Node

  A Compendium of Data Formats (Draft 0.5) C.N.P.Gee

- List of Requirements

  Meeting with Norman, Bruce and Murrough

- ROD Data Fragment from the test setup

  Murrough

List of Requirements

- Shall support different kinds of ROD fragments
  * CPM DAQ S-Link to ROS
  * JEM DAQ S-Link to ROS
  * CMM Cluster DAQ S-Link to ROS
  * CMM JET DAQ S-Link to ROS
  * CMM Energy DAQ S-Link to ROS
  * RoI (several formats CTPD and RoIB)

- Shall support different formats/versions in a transparent way

List of Requirements

- Shall provide a visual representation of ROD data fragments

  * employ TREES and TABLES to group related trigger tower data, . threshold hit information and sub-status data into slices.

- Shall provide a treatment for malformed fragments

  * colour schema to highlight bogus bits

- Shall provide printing features

  * text dump, graphical dump, create postscript output

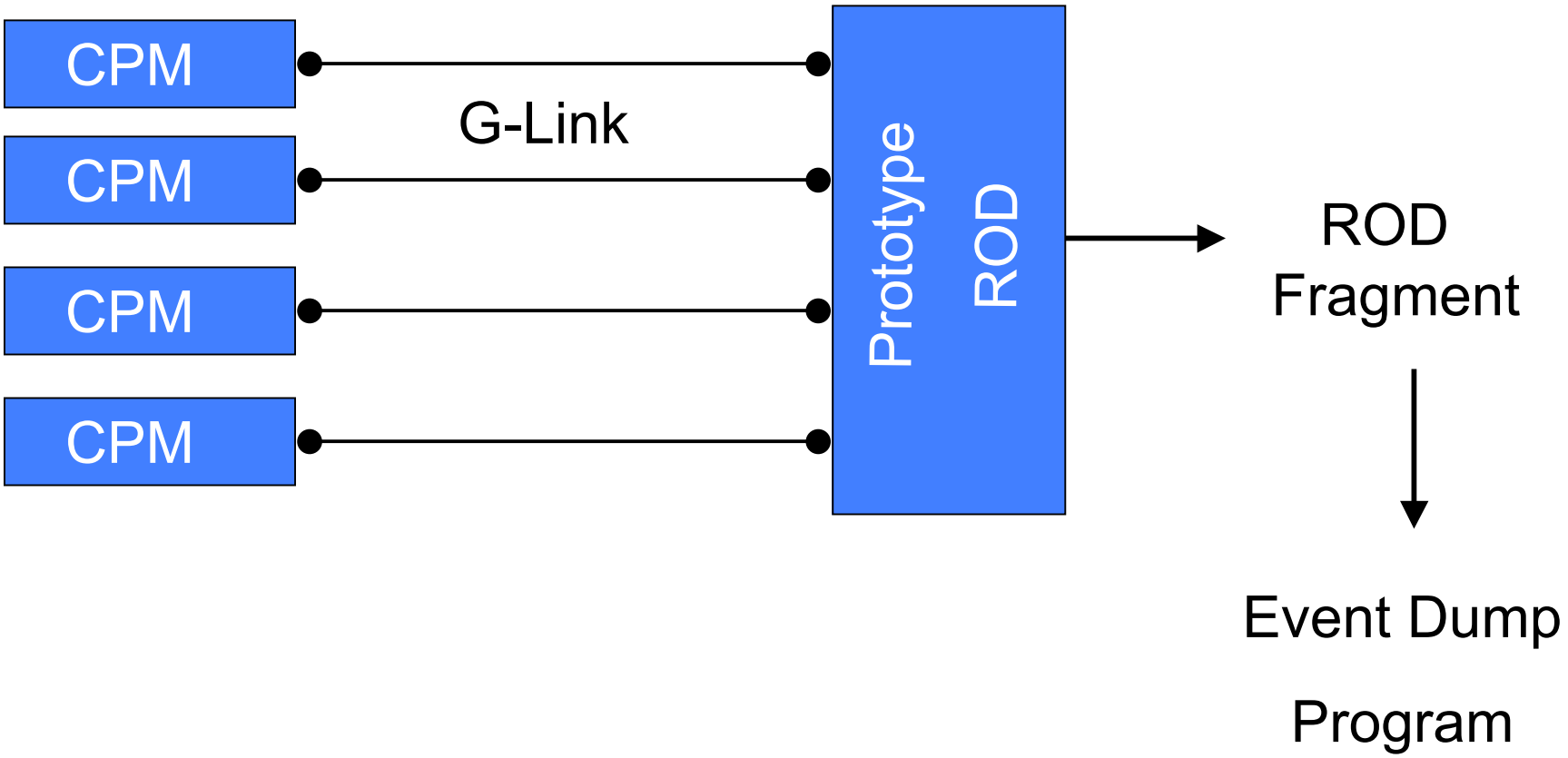
List of Requirements

- Shall be a user-guide/manual

  http://hepwww.ph.qmul.ac.uk/~kant/atlas/

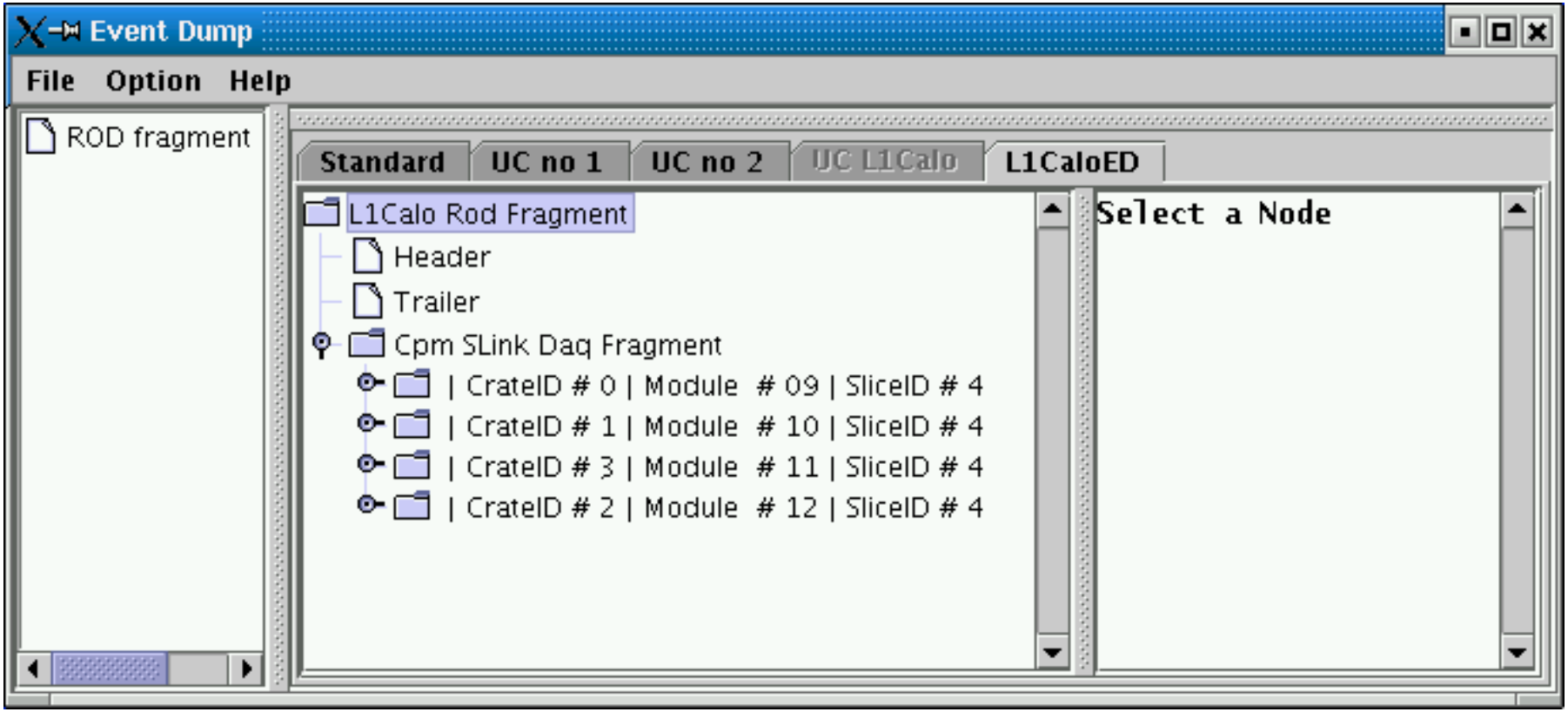
Prototype ROD Data Fragment

Basically four CPM modules feed data into a ROD



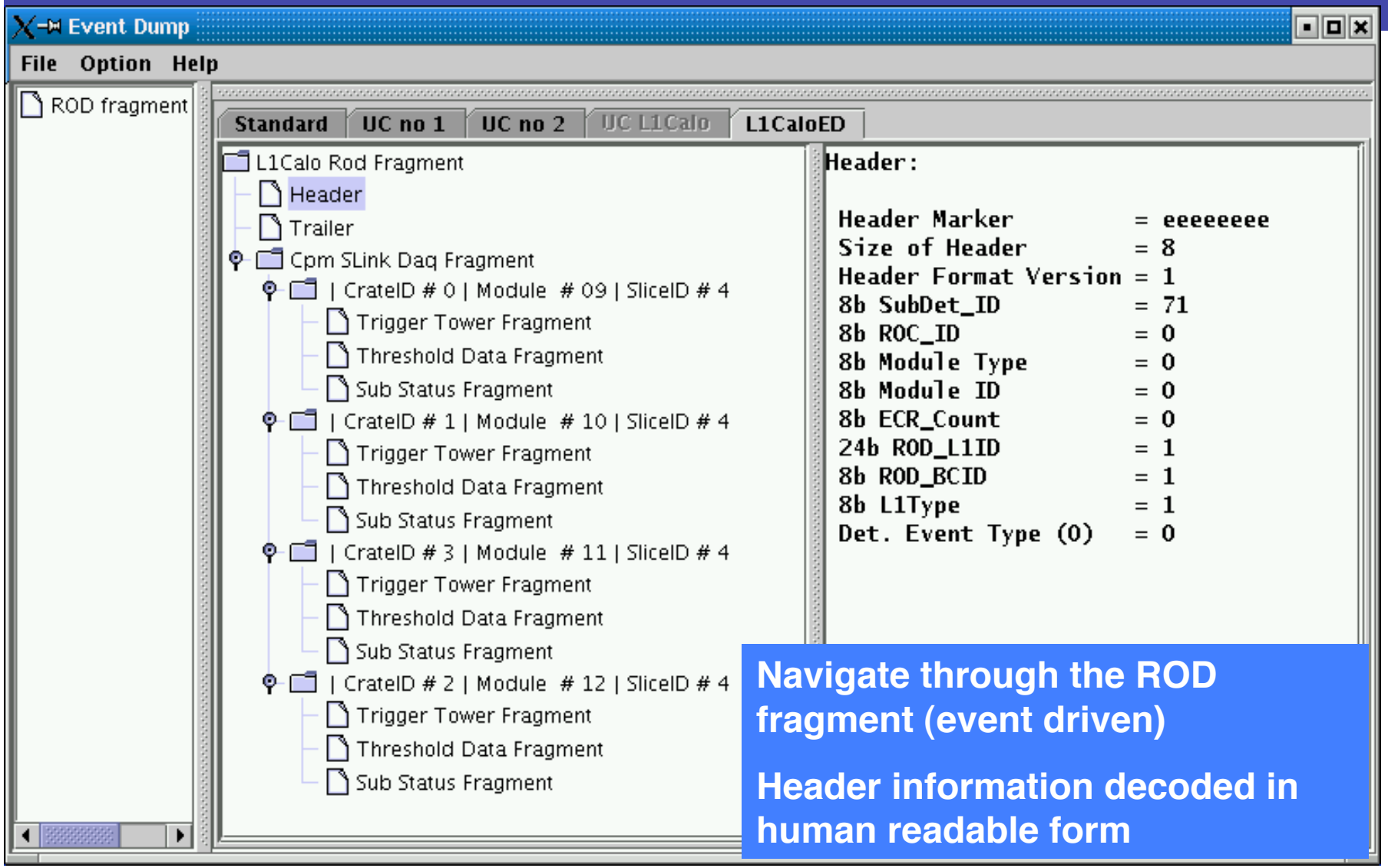
L1CaloED Panel

- Included our own panel called “L1CaloED”



ROD fragment identified as a CPM DAQ S-Link Fragment containing 1 slice for each of the 4 modules.

L1CaloED Panel

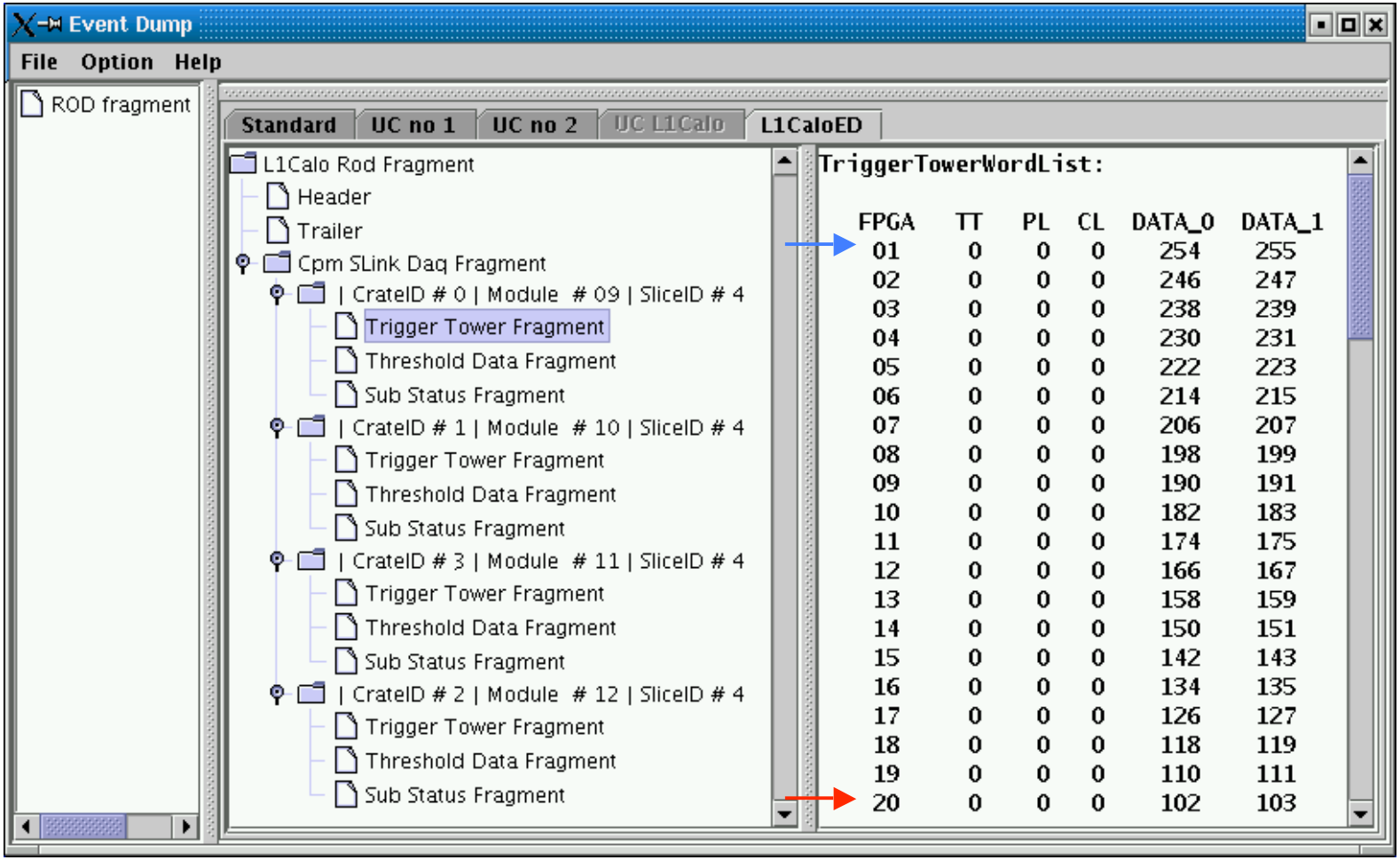


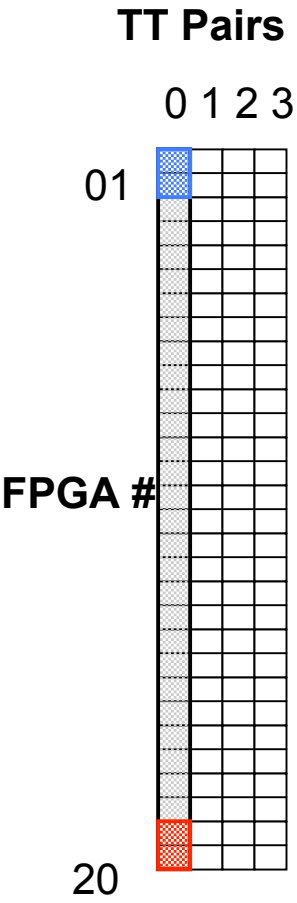
Navigate through the ROD fragment (event driven)

Header information decoded in human readable form

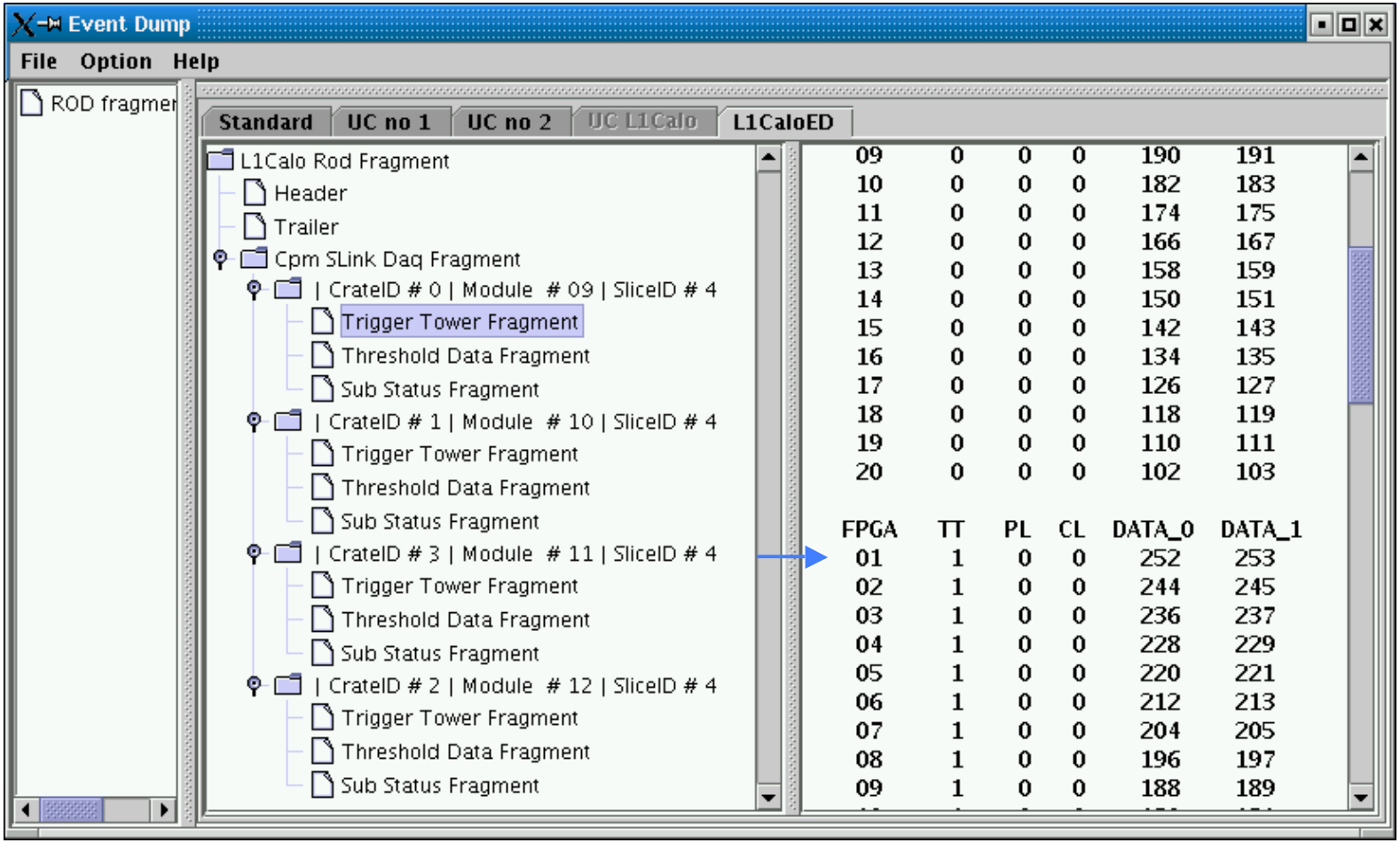
L1CaloED Panel

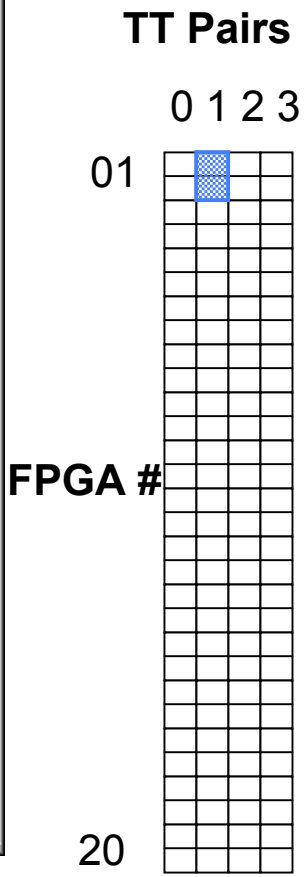
ModuleID = 9 => eta [0.4,0.8] (16+4)*4*2 Trigger Towers





L1CaloED Panel





Pending Data Requests

- An SLink CPM data fragment with only 1 slice per CPM
- An SLink CPM data fragment with multiple slices per CPM
- A CPM ROI data fragment
- An SLink JEM data fragment
- An SLink CMM jet data fragment
- An SLink CMM energy data fragment
- An SLink CMM cluster (e/gamma) fragment

Conclusions

- A customized user code panel under development
- Initial implementation supports CPM fragments
- Keen to extend the implementation but need other types of ROD fragments
- Comments/Suggestions welcome!