Definition uGT readout record

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http://www.hephy.at

http://globaltrigger.hephy.at

https://twiki.cern.ch/twiki/bin/viewauth/CMS/GlobalTrigger

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UNDER CONSTRUCTION !!!!

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63	60	56	52	48	44	40	36	32	28	24	20	16	12	8	4	0

0x5	Ev_t	LV1_id	BXId	Source_id	FOV	H	x	$	$
uFOV	Res	nAMC	Reserved	OrN	0x0				
0 L M S E P V C	AMC1_size	0 0 0 0	Blk_No	AmcNo	BoardID				
...									
0 L M S E P V C	AMC6_size	0 0 0 0	Blk_No	AmcNo	BoardID				
0x0	AmcNo AMC1	LV1_id	BXId	Data_lgth					
User		OrN	BoardID						
uGT build		MP7 FW version							
input data		BlockID=0x00	Block size	reserved ??					
input data		input data							
...									
BlockID=0x02	Block size	reserved ??	input data						
additional 11 input data blocks AMC1									
output data		BlockID=0x21	Block size	reserved ??					
output data		output data							
...									
BlockID=0x23	Block size	reserved ??	output data						
additional 8 output data blocks AMC1									
0x0	AmcNo AMC2	LV1_id	BXId	Data_lgth					
User		OrN	BoardID						
uGT build		MP7 FW version							
9 output data blocks AMC2									
blocks for AMC3 ... AMC6									
CRC 32 (AMCs)		LV1_id	0 0 0 0	Data_lgth					
CRC 32		0 0 0 0	Blk_No	LV1_id	BXId				
0xA	Evt_lgth	CRC	C	F	x	x	Ev stat	TTS	T R $ $

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Example of a readout record dump:

```
5186f41767557c08
10604240512ff300
0f00014a00010000
0f00009000020000
0f00009000030000
0f00009000040000
0f00009000050000
0f00009000060000
0186f4176750014a - AMC#, LV1 id, BX id, Data_lgth
000000c0ff300000
00001152000030202 - uGT FW build, MP7 FW version
00000000001e0200 - Block ID, Block size
... muon input data
021e020000000000 - Block ID, Block size
... muon input data
00000000041e0200
... muon input data
061e020000000000
... muon input data
06000200081e0200
... e/gamma input data
0a1e020006000200
... e/gamma input data
000008000c1e0200
... jet input data
0e1e020000000800
... jet input data
02000200101e0200
... tau input data
121e020002000200
... tau input data
0002a02a141e0200
... esums data
181e02000006f000
... ext cond input data
00000000211e0100
... algo output data AMC1
231e010000000000
... algo output data AMC1
00000000251e0100
... algo output data AMC1
271e01005ca70bcc
... algo output data AMC1
00000000291e0100
... algo output data AMC1
```

```
2b1e010000000000
...   algo output data AMC1
000000002d1e0100
...   algo output data AMC1
2f1e010000000000
...   algo output data AMC1
00000000311e0100
...   algo output data AMC1
9ac23b761700014a
0286f41767500090
000000c0ff300000
0000115200030202
00000000211e0100
...   algo output data AMC2
231e010000000000
...   algo output data AMC2
00000000251e0100
...   algo output data AMC2
271e01005ca70bcc
...   algo output data AMC2
00000000291e0100
...   algo output data AMC2
2b1e010000000000
...   algo output data AMC2
000000002d1e0100
...   algo output data AMC2
2f1e010000000000
...   algo output data AMC2
00000000311e0100
...   algo output data AMC2
cb79a76317000090
0386f41767500090
000000c0ff300000
0000115200030202
00000000211e0100
...
...   AMC3 - AMC6
...
36cb696317000090
f6b9461200017675
a000042484680000
```

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References

[1] AMC13 Event Builder:
http://ohm.bu.edu/~hazen/CMS/AMC13/UpdatedDAQPath_2014-07-10.pdf

[2] MP7 Readout & DAQ:
https://github.com/cms-l1-globaltrigger/mp7_ugt_legacy/blob/master/doc/mp7_ugt_firmware_specification/MP7Readout.pdf