

# Advanced Ingest and High Level Product Generation Systems



**GLOBAL IMAGING**

# Outline

- Critical DRO requirements that drive ingest/processing technologies
- Critical technologies that have the most impact on satisfying these requirements
- How and when will these technologies evolve and how may they impact the capabilities, availability and cost of DRO stations

# Critical DRO requirements that drive ingest technologies

- Automatic Failover
- Multi-satellite capability
  - GOES
  - POES
  - METOP, NPOESS

# Critical DRO requirements that drive processing technologies

- **Multilevel Product Generation**
- **Automated Customer Delivery**
- **QC Logging**

# Critical technologies that have the most impact on satisfying ingest requirements

- Common User Interface
- Automation Tools
- Programmable front-end hardware
- Multiple interface capability:
  - SCSI
  - TCI/IP
  - RS-422
  - IF

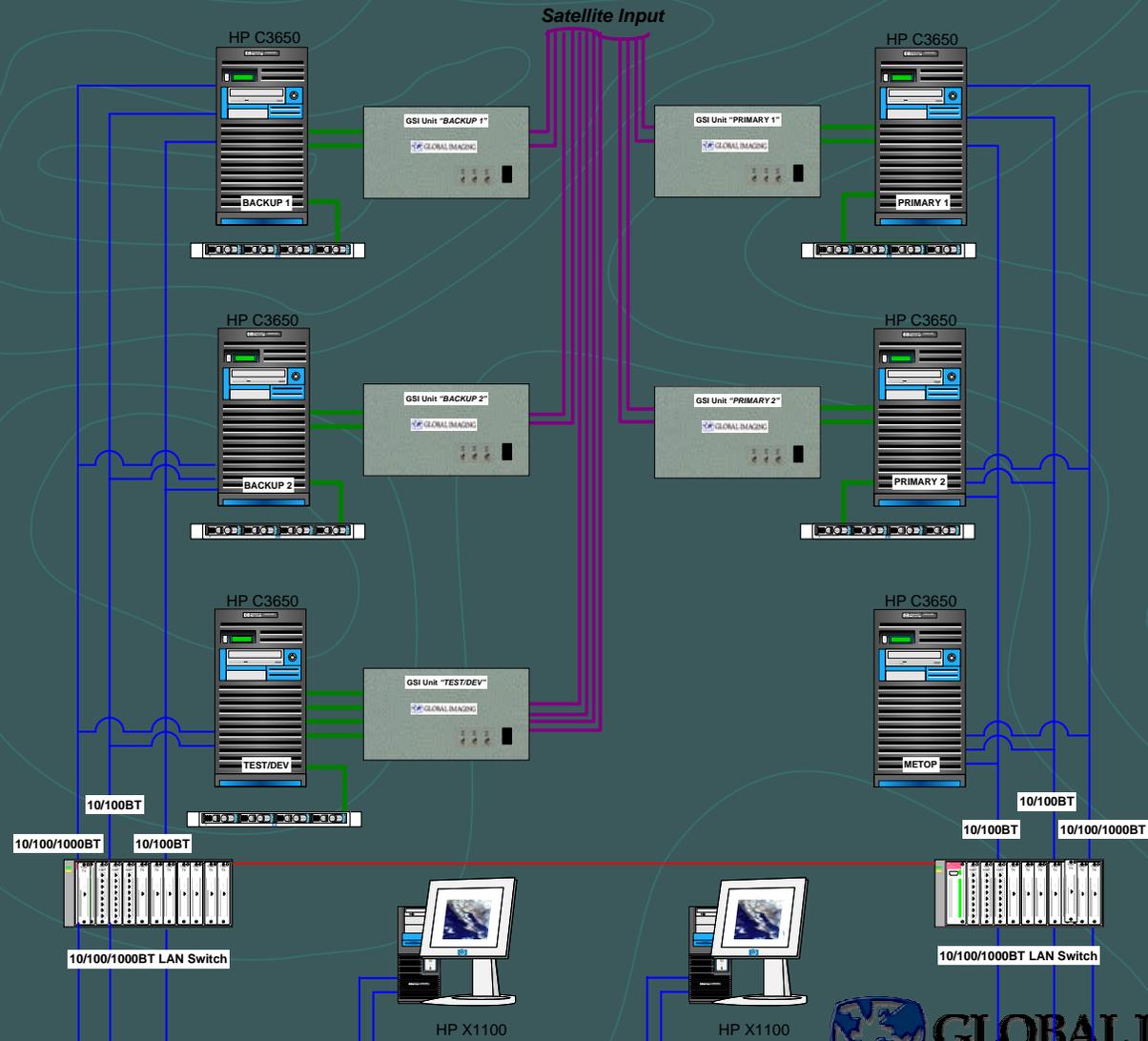
# Critical technologies that have the most impact on satisfying Product Generation requirements

- Error Tolerance
- Performance Logging
- Algorithm Modularity
- Programmer Applications Libraries
- Manager Interface
- Automation Tools (ancillary datasets)

# How and when will these technologies evolve and how may they impact the capabilities, availability and cost of DRO stations

- Technology is driven by high-volume user agencies.
- Model 1 System: Constant Capability, Decreasing Cost.
- Model 2 System: Constant Cost, Increasing Capability

# Example: Multiple Satellite Ingestor



# Operator Main Panel

## Simple control over multiple ingest channels

System View Filter Options Help

C	NAME	SAT	COMMAND	MODE	S/C	PASS	INTERVAL	SCAN	TYPE	BAD	GAPS	INGEST	DISTRIB
0	goes_gsi	GOES	Running	TEST	GOES-10	0	21:30:15-21:40:19	0	NHEMI	8	2	INGEST	WAIT
1	hrpt_gil	POES	Running	TEST	NOAA-16	670	21:18:52-21:31:38	4595	HRPT	0	0	WAIT	WAIT
2	poes_top	POES	Running	UNKNOWN	NOAA-16	585	17:41:30-17:42:20	300	HRPT	0	4	WAIT	WAIT
3	poes_raw	POES	Running	UNKNOWN	NOAA-16	585	17:41:31-17:42:21	299	HRPT	0	4	WAIT	WAIT

Ingest Log: Channel 0 - goes\_gsi Filter: NO tag NO static NO user text

```

1 056 21:47 DB Ch0 - F:AUX 11 0 1000 10 58878 C1 934 0 0 0 0 0 2 0 0100 0 0 0 0500 0 0 0 2A1036002868 0
1 056 21:47 DB Ch0 - F:AUX 11 0 1000 10 58879 C1 935 0 0 0 0 0 2 0 0100 0 0 0 0500 0 0 0 2A1036002868 0
1 056 21:47 DB Ch0 - F:AUX 11 0 1000 10 58880 C1 936 0 0 0 0 0 2 0 0100 0 0 0 0500 0 0 0 2A1036002868 0
1 056 21:47 DB Ch0 - F:AUX 11 0 1000 10 58881 C1 937 0 0 0 0 0 2 0 0100 0 0 0 0500 0 0 0 2A1036002868 0
1 056 21:47 DB Ch0 - F:AUX 11 0 1000 10 58882 C1 938 0 0 0 0 0 2 0 0100 0 0 0 0500 0 0 0 2A1036002868 0
1 056 21:47 DB Ch0 - F:AUX 11 0 1000 10 58883 C1 939 0 0 0 0 0 2 0 0100 0 0 0 0500 0 0 0 2A1036002868 0
1 056 21:47 DB Ch0 - F:AUX 11 0 1000 10 58884 C1 940 0 0 0 0 0 2 0 0100 0 0 0 0500 0 0 0 2A1036002868 0
1 056 21:47 DB Ch0 - F:AUX 11 0 1000 10 58885 C1 941 0 0 0 0 0 2 0 0100 0 0 0 0500 0 0 0 2A1036002868 0
1 056 21:47 DB Ch0 - F:AUX 11 0 1000 10 58886 C1 942 0 0 0 0 0 2 0 0100 0 0 0 0500 0 0 0 2A1036002868 0
1 056 21:47 DB Ch0 - F:AUX 11 0 1000 10 58887 C1 943 0 0 0 0 0 2 0 0100 0 0 0 0500 0 0 0 2A1036002868 0
1 056 21:47 DB Ch0 - F:AUX 11 0 1000 10 58888 C1 944 0 0 0 0 0 2 0 0100 0 0 0 0500 0 0 0 2A1036002868 0
1 056 21:47 DB Ch0 - F:AUX 11 0 1000 10 58889 C1 945 0 0 0 0 0 2 0 0100 0 0 0 0500 0 0 0 2A1036002868 0
1 056 21:47 DB Ch0 - F:AUX 11 0 1000 10 58890 C1 946 0 0 0 0 0 2 0 0100 0 0 0 0500 0 0 0 2A1036002868 0
1 056 21:47 DB Ch0 - F:AUX 11 0 1000 10 58891 C1 947 0 0 0 0 0 2 0 0100 0 0 0 0500 0 0 0 2A1036002868 0
1 056 21:47 DB Ch0 - F:AUX 11 0 1000 10 58892 C1 948 0 0 0 0 0 2 0 0100 0 0 0 0500 0 0 0 2A1036002868 0
1 056 21:47 DB Ch0 - F:AUX 11 0 1000 10 58893 C1 949 0 0 0 0 0 2 0 0100 0 0 0 0500 0 0 0 2A1036002868 0

```

Distribution Log: Channel 0 - goes\_gsi Filter: NO tag NO static NO user text

```

1 056 21:27 DB Ch0 - rcp_gla to marvin_gla, T1A,IR2F,GK,D04056,S2100,E2126 transferred.
1 056 21:27 DB Ch0 - rcp_gla to marvin_gla, T1A,IR3F,GK,D04056,S2100,E2126 transferred.
1 056 21:27 DB Ch0 - rcp_gla to marvin_gla, T1A,IR4F,GK,D04056,S2100,E2126 transferred.
1 056 21:27 DB Ch0 - rcp_gla to marvin_gla, T1A,IR5F,GK,D04056,S2100,E2126 transferred.
1 056 21:27 DB Ch0 - rcp_gla to marvin_gla, T1A,VISF,GK,D04056,S2100,E2126 transferred.
1 056 21:40 DB Ch0 - Executing script to distribute GT0,INGR,GK,D04056,S2130,E2140 dataset to marvin_g10
1 056 21:41 DB Ch0 - rcp_g10 to marvin_g10, GT0,INGR,GK,D04056,S2130,E2140 transferred.
1 056 21:41 DB Ch0 - Executing script to distribute T1A,DOCN,GK,D04056,S2130,E2140 dataset to marvin_gla
1 056 21:41 DB Ch0 - rcp_gla to marvin_gla, T1A,DOCN,GK,D04056,S2130,E2140 transferred.
1 056 21:41 DB Ch0 - rcp_gla to marvin_gla, T1A,IR2N,GK,D04056,S2130,E2140 transferred.
1 056 21:41 DB Ch0 - rcp_gla to marvin_gla, T1A,IR3N,GK,D04056,S2130,E2140 transferred.
1 056 21:41 DB Ch0 - rcp_gla to marvin_gla, T1A,IR4N,GK,D04056,S2130,E2140 transferred.
1 056 21:41 DB Ch0 - rcp_gla to marvin_gla, T1A,IR5N,GK,D04056,S2130,E2140 transferred.
1 056 21:41 DB Ch0 - rcp_gla to marvin_gla, T1A,VISN,GK,D04056,S2130,E2140 transferred.
1 056 21:45 DB Ch0 - Executing script to distribute GT0,SNDR,GK,D04056,S2124,E2145 dataset to marvin_g10
1 056 21:45 DB Ch0 - rcp_g10 to marvin_g10, GT0,SNDR,GK,D04056,S2124,E2145 transferred.

```

# Channel Processing Status

- Provides a continuous near-real time display of ingest statistics

Ingestion Distribution

Channel:  **Data Type: GOES**

**Ingest Statistics**

State:  Mode:  Command:

Data Set Name	Xfer/Exp	S#	Gaps	TO
[Empty Table]				

**Spacecraft Statistics**

S/C ID:  Blocks Ingested:

Bad Blocks:

Imaging Mode:  N Vis Line:

Pass Start:  S Vis Line:

Scan Count:  E Vis Line:

Data Status:  W Vis Line:

IMC Flag:  Sat Sub-Lat:

Interrupt Frame:  Sat Sub-Lon:

# Ingestion Menus

- Enable/Disable Level 0 Ingestion
- Enable/Disable Level 1A Ingestion
- Select Ingestion Debug Level

L0 Processing:  Enabled

L1A Processing:  Enabled

Debug Level:  Terse

# Distribution Menu

Enabled	Logical Dest.	Product List	Path
Disabled <input type="checkbox"/>	marvin_p10	ALL	/users/afep/AFEP/poes_tcp/Dist
Disabled <input type="checkbox"/>			

Send Cancel

- Define Destinations to Distribute
- Enable/Disable Distribution

# Options

- Storage Usage
- File System Usage

**Storage Directories Usage**

Storage Path	Link Type	#Items	#Extra	Mbytes	Percent
/users/afep/AFEP/goes_gsi_1/Data/Level0	yes files	541	0	9818	28% of /disc1
/users/afep/AFEP/goes_gsi_1/Data/Level1a	yes files	602	0	9086	26% of /disc2
/users/afep/AFEP/goes_gsi_2/Data/Level0	yes files	522	0	9049	26% of /disc3
/users/afep/AFEP/goes_gsi_2/Data/Level1a	yes files	587	0	8275	24% of /disc4
				36228	

Re-Calculate Done

**File System Usage**

Local Disk Usage:

Filesystem	Mbytes	used	avail	%used	Mounted on
/dev/vg00/lvol3	200	89	112	44%	/
/dev/vg00/lvol11	292	78	186	30%	/stand
/dev/vg00/lvol18	4600	377	4192	8%	/var
/dev/vg00/lvol17	1392	964	426	69%	/usr
/dev/vg00/lvol14	200	4	196	2%	/tmp
/dev/vg00/lvol16	936	614	320	66%	/opt
/dev/vg00/lvol15	10000	339	9586	3%	/home
/dev/vg04/ldisc4	34724	8272	26246	24%	/disc4
/dev/vg03/ldisc3	34724	9059	25466	26%	/disc3
/dev/vg02/ldisc2	34724	9088	25437	26%	/disc2
/dev/vg01/ldisc1	34724	9828	24703	28%	/disc1
Total Local	156516	38712	116870		

Remote Disk Usage:

Filesystem	Mbytes	used	avail	%used	Mounted on
Total Remote	0	0	0		

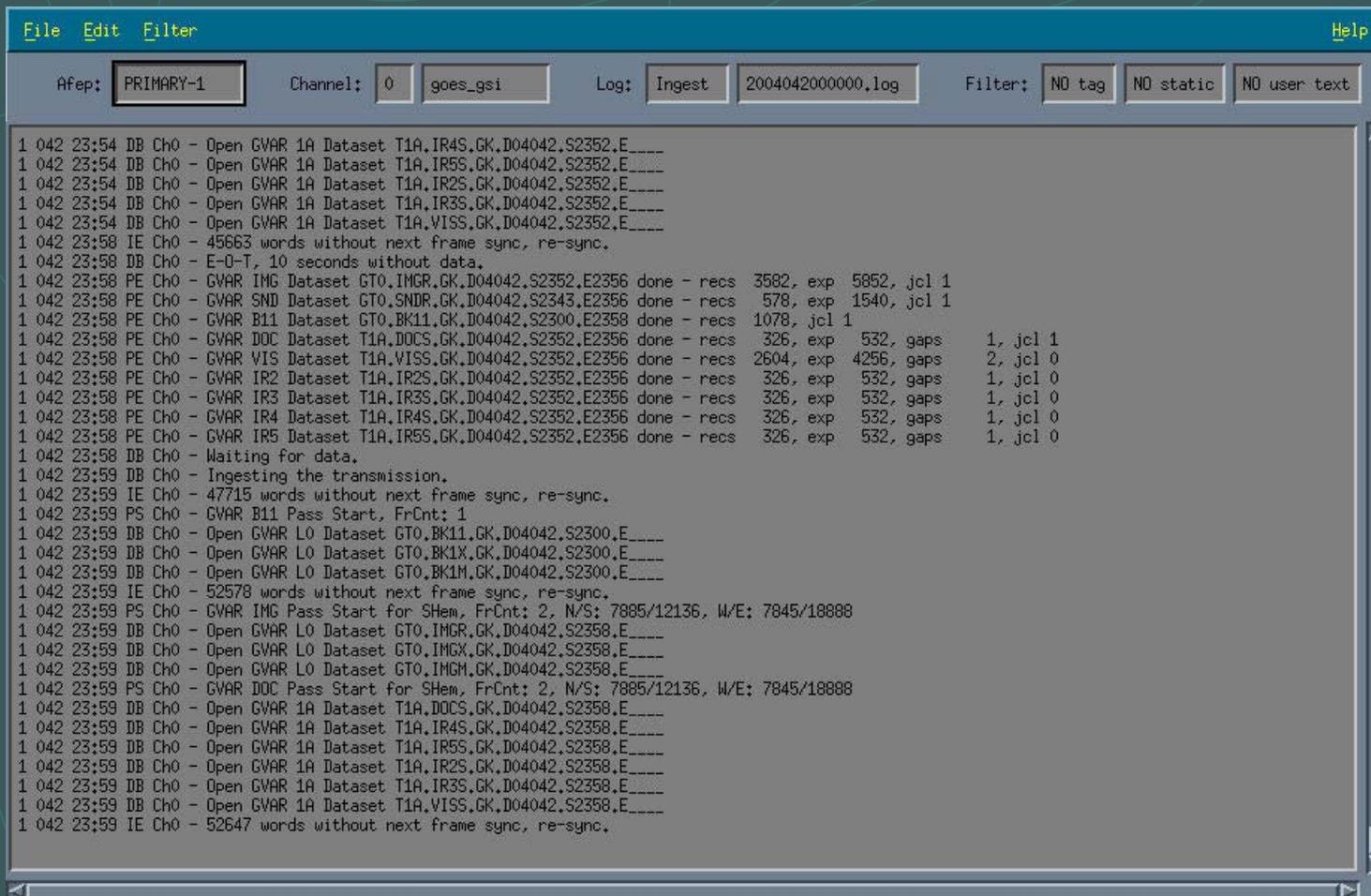
Total Local+Remote

156516	38712	116870			
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Re-Calculate Done

# Browse

- AFEP Browse is used to view existing log files



The screenshot displays the AFEP Browse application window. The title bar includes 'File Edit Filter' and 'Help'. The interface features several input fields: 'Afept: PRIMARY-1', 'Channel: 0', 'goes\_gsi', 'Log: Ingest', '2004042000000.log', and 'Filter: NO tag NO static NO user text'. The main area contains a log file with the following text:

```
1 042 23:54 DB Ch0 - Open GVAR 1A Dataset T1A,IR4S,GK,D04042,S2352,E____
1 042 23:54 DB Ch0 - Open GVAR 1A Dataset T1A,IR5S,GK,D04042,S2352,E____
1 042 23:54 DB Ch0 - Open GVAR 1A Dataset T1A,IR2S,GK,D04042,S2352,E____
1 042 23:54 DB Ch0 - Open GVAR 1A Dataset T1A,IR3S,GK,D04042,S2352,E____
1 042 23:54 DB Ch0 - Open GVAR 1A Dataset T1A,VISS,GK,D04042,S2352,E____
1 042 23:58 IE Ch0 - 45663 words without next frame sync, re-sync.
1 042 23:58 DB Ch0 - E-O-T, 10 seconds without data.
1 042 23:58 PE Ch0 - GVAR IMG Dataset GTO,IMGR,GK,D04042,S2352,E2356 done - recs 3582, exp 5852, jcl 1
1 042 23:58 PE Ch0 - GVAR SND Dataset GTO,SNDR,GK,D04042,S2343,E2356 done - recs 578, exp 1540, jcl 1
1 042 23:58 PE Ch0 - GVAR B11 Dataset GTO,BK11,GK,D04042,S2300,E2358 done - recs 1078, jcl 1
1 042 23:58 PE Ch0 - GVAR DOC Dataset T1A,DOCS,GK,D04042,S2352,E2356 done - recs 326, exp 532, gaps 1, jcl 1
1 042 23:58 PE Ch0 - GVAR VIS Dataset T1A,VISS,GK,D04042,S2352,E2356 done - recs 2604, exp 4256, gaps 2, jcl 0
1 042 23:58 PE Ch0 - GVAR IR2 Dataset T1A,IR2S,GK,D04042,S2352,E2356 done - recs 326, exp 532, gaps 1, jcl 0
1 042 23:58 PE Ch0 - GVAR IR3 Dataset T1A,IR3S,GK,D04042,S2352,E2356 done - recs 326, exp 532, gaps 1, jcl 0
1 042 23:58 PE Ch0 - GVAR IR4 Dataset T1A,IR4S,GK,D04042,S2352,E2356 done - recs 326, exp 532, gaps 1, jcl 0
1 042 23:58 PE Ch0 - GVAR IR5 Dataset T1A,IR5S,GK,D04042,S2352,E2356 done - recs 326, exp 532, gaps 1, jcl 0
1 042 23:58 DB Ch0 - Waiting for data.
1 042 23:59 DB Ch0 - Ingesting the transmission.
1 042 23:59 IE Ch0 - 47715 words without next frame sync, re-sync.
1 042 23:59 PS Ch0 - GVAR B11 Pass Start, FrCnt: 1
1 042 23:59 DB Ch0 - Open GVAR L0 Dataset GTO,BK11,GK,D04042,S2300,E____
1 042 23:59 DB Ch0 - Open GVAR L0 Dataset GTO,BK1X,GK,D04042,S2300,E____
1 042 23:59 DB Ch0 - Open GVAR L0 Dataset GTO,BK1M,GK,D04042,S2300,E____
1 042 23:59 IE Ch0 - 52578 words without next frame sync, re-sync.
1 042 23:59 PS Ch0 - GVAR IMG Pass Start for SHem, FrCnt: 2, N/S: 7885/12136, W/E: 7845/18888
1 042 23:59 DB Ch0 - Open GVAR L0 Dataset GTO,IMGR,GK,D04042,S2358,E____
1 042 23:59 DB Ch0 - Open GVAR L0 Dataset GTO,IMGX,GK,D04042,S2358,E____
1 042 23:59 DB Ch0 - Open GVAR L0 Dataset GTO,IMGM,GK,D04042,S2358,E____
1 042 23:59 PS Ch0 - GVAR DOC Pass Start for SHem, FrCnt: 2, N/S: 7885/12136, W/E: 7845/18888
1 042 23:59 DB Ch0 - Open GVAR 1A Dataset T1A,DOCS,GK,D04042,S2358,E____
1 042 23:59 DB Ch0 - Open GVAR 1A Dataset T1A,IR4S,GK,D04042,S2358,E____
1 042 23:59 DB Ch0 - Open GVAR 1A Dataset T1A,IR5S,GK,D04042,S2358,E____
1 042 23:59 DB Ch0 - Open GVAR 1A Dataset T1A,IR2S,GK,D04042,S2358,E____
1 042 23:59 DB Ch0 - Open GVAR 1A Dataset T1A,IR3S,GK,D04042,S2358,E____
1 042 23:59 DB Ch0 - Open GVAR 1A Dataset T1A,VISS,GK,D04042,S2358,E____
1 042 23:59 IE Ch0 - 52647 words without next frame sync, re-sync.
```