GLAST Large Area Telescope:

I&T Integration Kickoff Meeting
SVAC

March 9th, 2004

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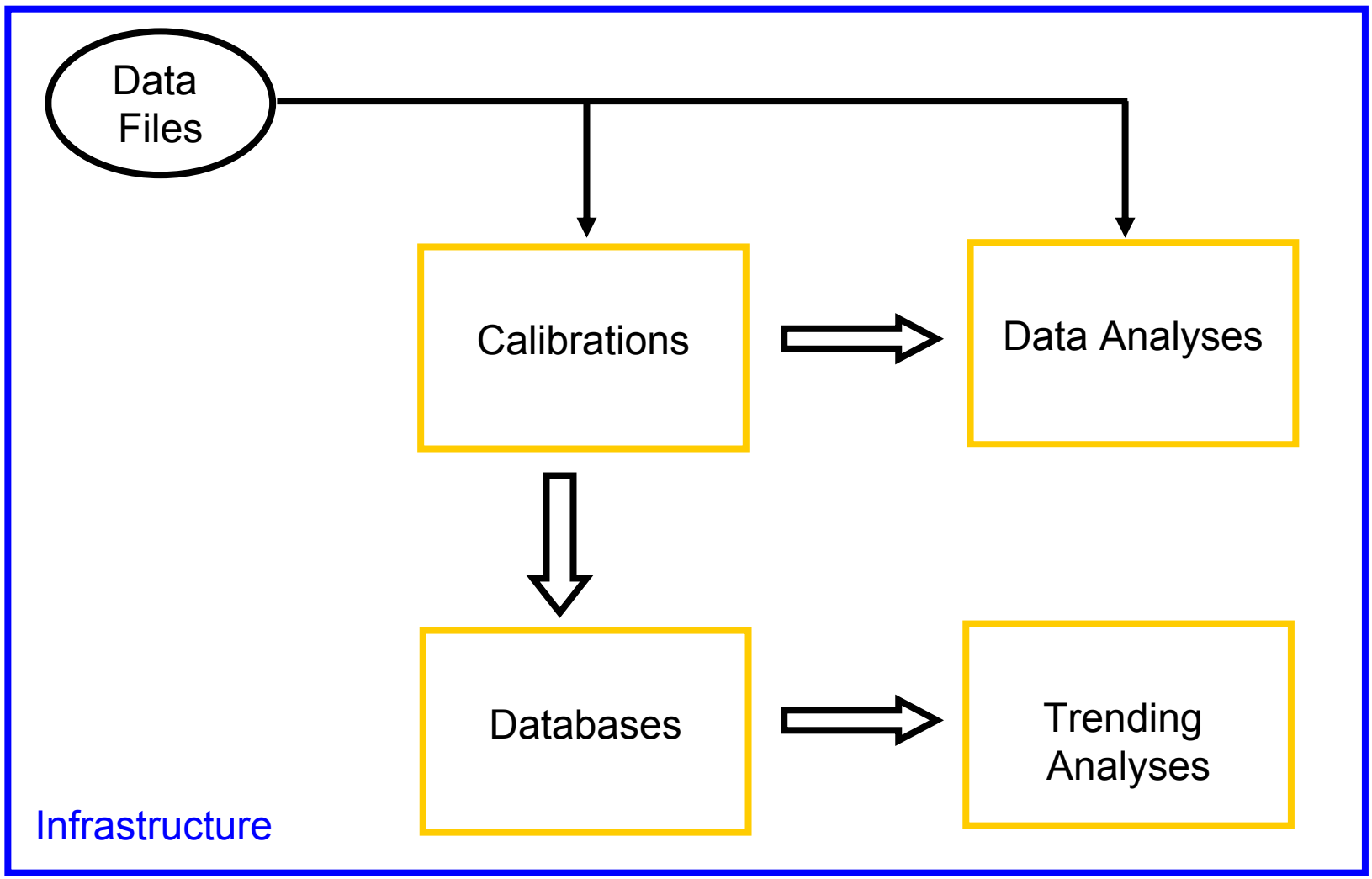
SVAC Plan

- **Calibrations**
  - To verify that offline/online calibrations agree
  - To improve calibrations by using additional information not available to subsystems
  - To develop trend analyses to provide knowledge on the history of calibrations
- **Data analyses**
  - To apply SAS reconstruction algorithms on real data
  - To uncover and quantify any instrumental effects that could have an impact on science data analysis

The same data used for calibrations can be used to improve our knowledge on the LAT instrument before launch

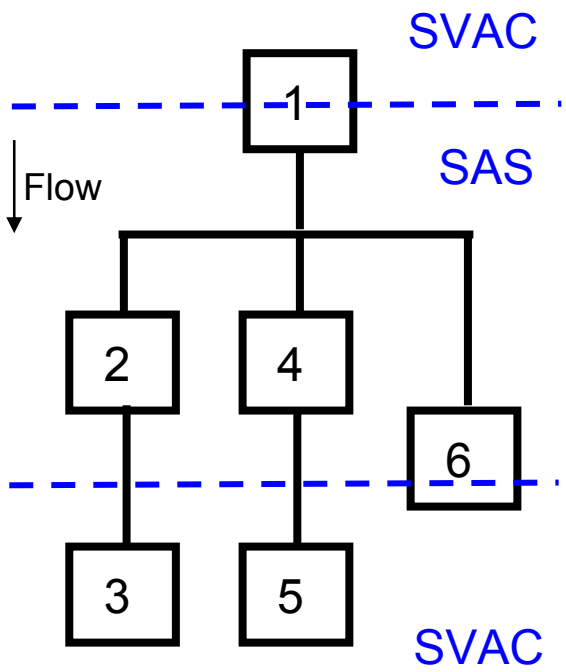
Overview


Data Files
Calibrations
Data Analyses
Databases
Trending Analyses
Infrastructure

Calibrations

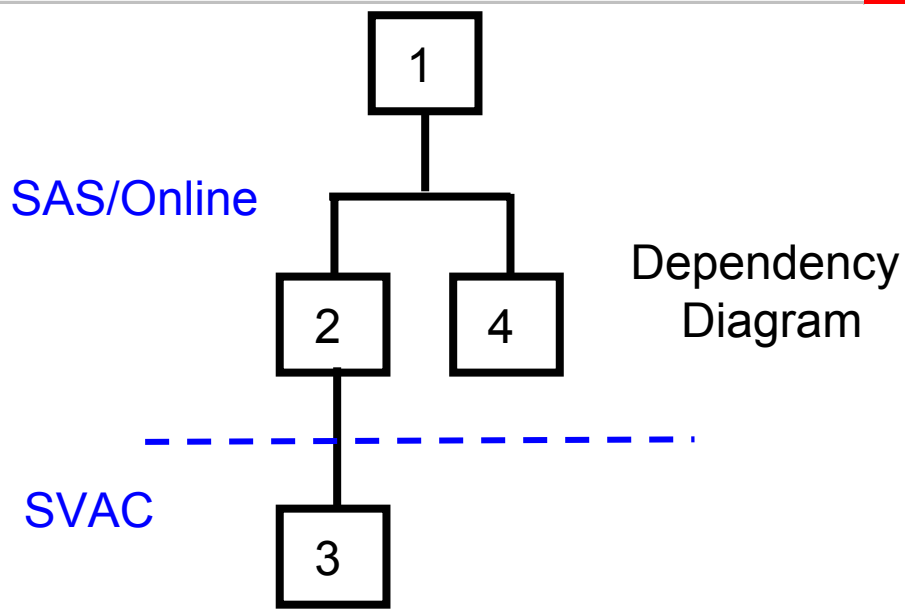
			Lead	Participants
1	Definition of calibration tasks		SVAC	LAT
	Design of offline calibration infrastructure		SAS	SVAC
2	TKR calibration package under configuration control		SAS	TKR
	CAL calibration package under configuration control		SAS	CAL
	ACD calibration package under configuration control		SAS	ACD
	Read TKR calibration constants into recon		SAS	TKR
	Read CAL calibration constants into recon		SAS	CAL
	Read ACD calibration constants into recon		SAS	ACD
	Read TKR configuration info into recon		SAS	TKR
	Read CAL configuration info into recon		SAS	CAL
	Read ACD configuration info into recon		SAS	ACD
	TKR executable for large batch processing		SAS	TKR
	CAL executable for large batch processing		SAS	CAL
	ACD executable for large batch processing		SAS	ACD
3	Generate TKR constants and test code		SVAC	SAS
	Generate CAL constants and test code		SVAC	SAS
	Generate ACD constants and test code		SVAC	SAS
4	Definition of TKR interface for config info from online to offline		SAS	Online/TKR
	Definition of CAL interface for config info from online to offline		SAS	Online/CAL
	Definition of ACD interface for config info from online to offline		SAS	Online/ACD
	Implementation of online/offline interface for configuration files		SAS	
5	Generate TKR configuration info and test MC code		SVAC	SAS
	Generate CAL configuration info and test MC code		SVAC	SAS
	Generate ACD configuration info and test MC code		SVAC	SAS
6	TKR documentation		TKR	SAS
	CAL documentation		CAL	SAS
	ACD documentation		ACD	SAS
	SAS documentation		SAS	SVAC
	SVAC documentation		SVAC	

Dependency Diagram



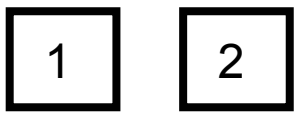
Event Formats

	Event Formats and Interfaces		Lead	Participants
1	Definition of Level 0 Event Formats		Online	SAS/SVAC
	Definition of Offline File Formats		SAS	SVAC
2	Implementation of online parsing into offline		SAS	Online
	EBF system tests to validate parsing offline		SAS	Online/SVAC
3	Definition of FITS/ROOT interface		SVAC	SAS/Online
	Implementation and test of FITS/ROOT interface		SVAC	SAS/Online
4	EBF Documentation		Online	
	ROOT Documentation		SAS	
	FITS/ROOT Documentation		SVAC	



SAS Tools

	SAS tools		Lead	Participants
1	Definition of LAT geometry		SAS	ACD/TKR/CAL/SVAC
	Implementation and Validation of geometry		SAS	ACD/TKR/CAL/SVAC
	Implementation of XML files for I&T configurations		SVAC	
	Test and validation of I&T implementation		SVAC	
	Documentation of geometry validation		SAS	ACD/TKR/CAL/SVAC
2	Definition of SAS Reconstruction Tests for SVAC		SVAC	
	Implementation of SAS Reconstrcution Tests for SVAC		SAS	

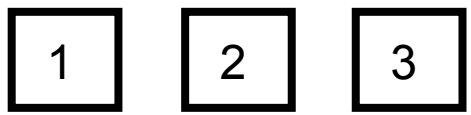


Dependency Diagram

Tasks in groups 1 and 2 can occur in parallel

Data Processing Pipeline

	Data Processing Pipeline		Lead	Participants
1	Definition of MC pipeline (1-2 towers)		SVAC	SAS
	Implementation of MC pipeline (1-2 towers)		SVAC	SAS
	Generation of MC datasets (1-2 towers)		SVAC	
2	Definition of data pipeline (1-2 towers)		SVAC	SAS
	Implementation of Data pipeline (1-2 towers)		SVAC	SAS
	Generation of datasets (1-2 towers)		SVAC	
3	Description of data storage needs		SVAC	SAS
	Implementation of storage infrastructure		SAS	SVAC

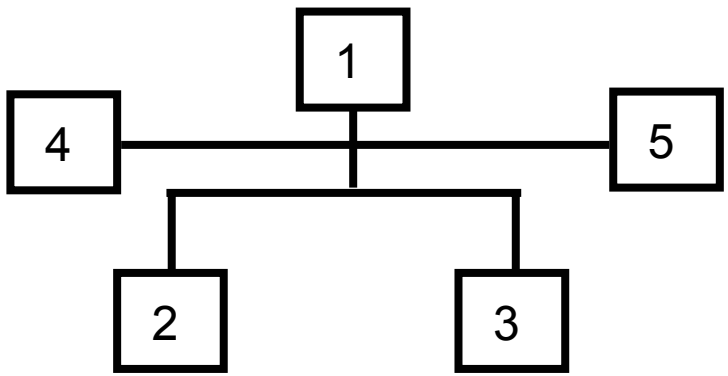


Dependency Diagram

Tasks in groups 1, 2 and 3 can occur in parallel

Data Analyses

	Data analysis		Lead	Participants
1	Definition of tasks (1-2 towers)		SVAC	LAT
2	Software implementation for MC analysis (1-2 towers)		SVAC	LAT
	MC tests (1-2 towers)		SVAC	LAT
3	Software implementation for Data analysis (1-2 towers)		SVAC	LAT
	Data Tests (1-2 towers)		SVAC	LAT
4	Trigger Analysis (EM1)		SVAC	ELX
	Analysis of Energy Spectrum (EM1)		SVAC	CAL
	TOT Analysis (EM1)		SVAC	TKR
5	Definition of EM2 data taking requirements		SVAC	
	Definition of EM2 data analysis		SVAC	
	Data processing (EM2)		SVAC	
	Analysis of VDG backgrounds (EM2)		SVAC	
	Analysis of high rate tests (EM2)		SVAC	
	Timing analysis (EM2)		SVAC	
	TOT Analysis (EM2)		SVAC	

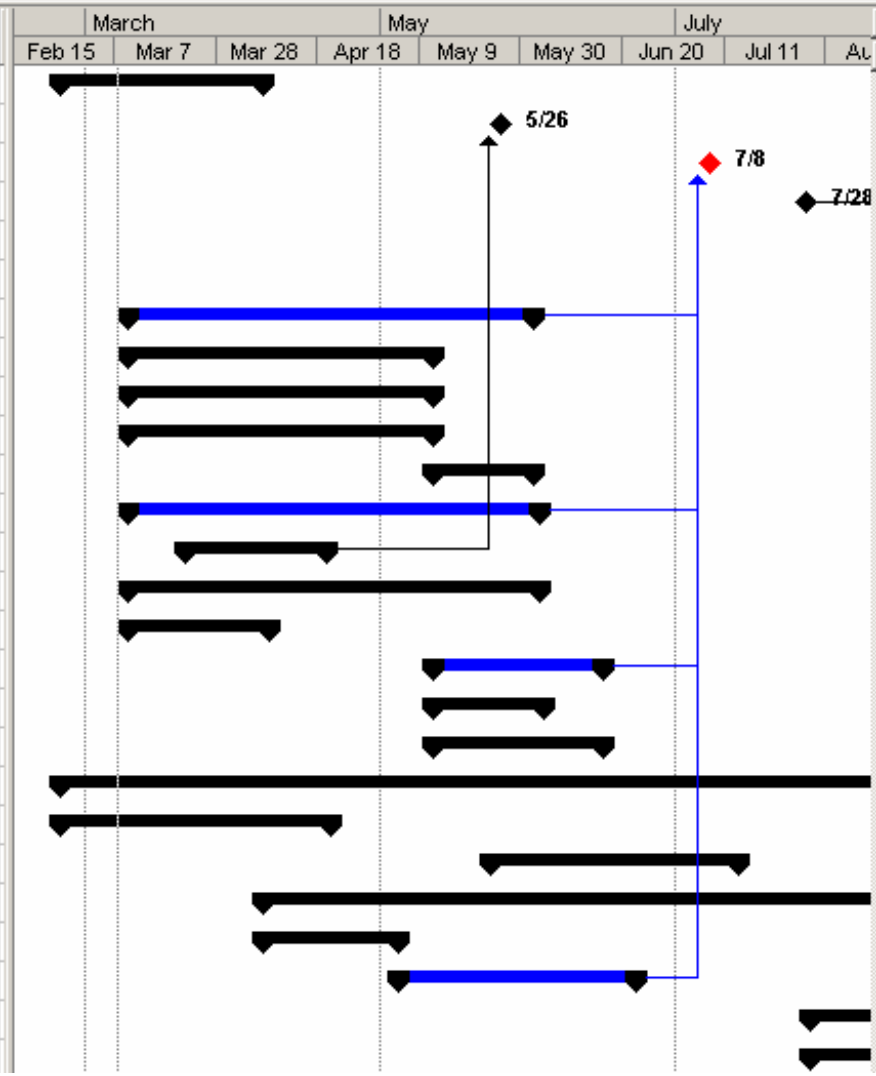


Dependency Diagram

Preliminary Schedule

SAS and SVAC are still working on agreement of need dates, duration of tasks and resource loading

	Task Name	Early Start	Early Finish	Duration
1	⊞ Plannning	Wed 2/25/04	Tue 4/6/04	30 days
6	SVAC Workshop 1	Wed 5/26/04	Fri 5/28/04	3 days
7	I&T Readness Review	Thu 7/8/04	Fri 7/9/04	2 days
8	Tower A delivery	Wed 7/28/04	Wed 7/28/04	1 day
9	Tower B delivery	Wed 8/18/04	Wed 8/18/04	1 day
10	LAT assembled	Wed 7/6/05	Wed 7/6/05	1 day
11	⊟ Calibrations	Wed 3/10/04	Tue 6/1/04	60 days
12	⊞ TKR	Wed 3/10/04	Tue 5/11/04	45 days
20	⊞ CAL	Wed 3/10/04	Tue 5/11/04	45 days
28	⊞ ACD	Wed 3/10/04	Tue 5/11/04	45 days
36	⊞ SVAC	Wed 5/12/04	Tue 6/1/04	15 days
44	⊟ Infrastructure	Wed 3/10/04	Wed 6/2/04	61 days
45	⊞ Event Formats	Mon 3/22/04	Mon 4/19/04	21 days
50	⊞ Data Processing Facility	Wed 3/10/04	Wed 6/2/04	61 days
58	⊞ SAS tools	Wed 3/10/04	Wed 4/7/04	21 days
62	⊟ Databases	Wed 5/12/04	Tue 6/15/04	25 days
63	⊞ SAS	Wed 5/12/04	Thu 6/3/04	17 days
68	⊞ SVAC	Wed 5/12/04	Tue 6/15/04	25 days
72	⊟ Data Analysis	Wed 2/25/04	Wed 9/1/04	136 days
73	⊞ EM1	Wed 2/25/04	Tue 4/20/04	40 days
78	⊞ EM2	Mon 5/24/04	Tue 7/13/04	37 days
85	⊟ LAT	Wed 4/7/04	Wed 9/1/04	106 days
86	⊞ Definition stage	Wed 4/7/04	Tue 5/4/04	20 days
89	⊞ Software Implementation and Test	Wed 5/5/04	Tue 6/22/04	35 days
93	⊞ One Tower tests	Thu 7/29/04	Wed 8/25/04	20 days
97	⊞ Two towers Tests	Thu 7/29/04	Wed 9/1/04	25 days



Summary

- SVAC group consists of 4 people
  - Eduardo do Couto e Silva
  - Xin Chen
  - Jim Panetta – "on loan" to Online
  - Anders Borgland– will start only in April
- SVAC depends strongly on work outside SVAC, for example,
  - SAS Calibration infrastructure
  - SAS/Online Event Format definitions
- The organization and definition of the Data Analysis is under way and its implementation will require additional resources
- Trending analyses which are potentially useful for ISOC, are receiving lower priority due to lack of resources. Online brought up similar concern.