



Enabling Grids for E-scienceE

Update on features in gLite FTS

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On behalf of the JRA1 Data Management team

FTS Administrator Workshop

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www.eu-egee.org



Information Society
and Media



- **Current Status**

- FTS 1.5.x
 - Patches
 - Reporting

- **Next Focus**

- FTS 2.0
 - Schema
 - Delegation
 - SRM 2.2 support



Grid File Transfer Service



- **FTS version 1.5.1**
 - August 2006
- **Available patches:**
 - [#773](#) : fix SRM copy
 - [#801](#) : FTS infoprovider speedup
Archival task
 - [#825](#) : CLI upgrade (required before moving to FTS 2.0)
glite-transfer-discovery
Improved '-s' option (accept site and host names)
- **Coming patches (in Certification)**
 - [#852](#) : fix for
 - DB lock
 - 'device or resource busy' srm put error
 - Wrong categorization of gsiftp failures
- **In Progress**
 - Tomcat Tuning

- **We run the WLCG FTS service at CERN**
 - Support: FTS is a front end service that uses other services (SRM, GridFTP, MyProxy ...)
 - Users will always contact the FTS administrators (even when the problem is somewhere else)
 - Distinguish between transient errors from critical ones
 - Need to improve error reporting
 - Need to know the service status
 - Need to have a consolidated view of what happened in a given interval

⇒ **Monitoring & Reporting**

- **Reporting:**
 - Process that allows to produce a consolidated view of the service status
 - Measure the Service Level
 - Understand the actual problems
- **Monitoring:**
 - Provide an immediate feedback on the service behavior
 - Events and alarms
 - Act proactively to avoid problems
- **We need both !**

- **We have a lot of information stored in the DB that we can extract, e.g.:**
 - Summary of channel activity, failure rate, average file size, average duration, bytes written, ...
 - We need a way to present it
- **Simple approach:**
 - A script extracts this information from the DB and store it as XML file
 - XSLT transforms it into a HTML page
 - Published through a Web server (apache/gridsite)
 - Installed as cron job
- **Prototype, other solutions may exist (jasper)**
 - Focus on the service

FTS Report - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://pilotgm02:8081/channel/transfer/day

CERN DataMgmt Links Development Interesting Stuff

FTS Report

Disclaimer
This page contains a report generated from information stored in the FTS Database and is intended for reporting purposes only. Since the format will probably change in the future, it's therefore recommended not to use parsing robots on it.

Statistics concerning all the transfers performed yesterday
Between 2006-10-12 08:00:00 +02:00 and 2006-10-13 08:00:00 +02:00

CERN-*

Channel Name	VO Name	Total	% Failures	# Succ.	# Fail.	1st Failure Reason	% 1st Failure Reason	2nd Failure Reason	% 2nd Failure Reason	Avg. Size (GB)	Avg. Duration (sec)	Avg. Tx Rate (MB/sec)	Eff. Tx Bytes (GB)	Tx Bytes (GB)
CERN-PIC	[All]	12262	73.97	3192	9070	Dest SRM	56.22	Other	37.53	0.53	263.03	1.62	1700.41	1700.41
	atlas	8932	99.92	7	8925	Dest SRM	57.13	Other	38.08	0	220	0	0	0
	cms	208	0	208	0					2.7	767.55	3.64	561.26	561.26
	dteam	974	0.51	969	5	Other	80	Source SRM	20	0.95	356.31	2.88	923.83	923.83
	lhcb	2145	6.53	2005	140	Source SRM	99.29	Other	0.71	0.11	165.85	0.81	215.32	215.32
	ops	3	0	3	0					0	202.67	0	0	0
CERN-RAL	[All]	8699	59.26	3544	5155	Other	84.91	Source SRM	14.88	0.85	478.22	2.59	3026.81	3027.57
	alice	1155	82.6	201	954	Other	99.58	Dest SRM	0.31	1.86	1805.05	1.11	372.95	372.95
	atlas	4512	88.52	518	3994	Other	84.85	Source SRM	15.15	1.79	1428.94	1.49	926.26	926.57
	cms	227	3.08	220	7	Dest SRM	85.71	Source SRM	14.29	2.53	348.65	10.08	555.61	555.61
	dteam	1077	3.99	1034	43	Other	86.05	Source SRM	9.3	0.95	276.64	4.01	980.47	980.91
	lhcb	1725	9.1	1568	157	Source SRM	99.36	Other	0.64	0.12	146.03	1.16	191.52	191.52
	ops	3	0	3	0					0	27	0.01	0	0
CERN-SARA	[All]	8792	42.55	5051	3741	Dest SRM	83.77	Source SRM	12.22	1.34	108.02	15.4	6777.95	6784.92
	alice	3134	15.12	2660	474	Source SRM	57.17	Dest SRM	41.14	1.66	109.53	18.43	4426.44	4430.29
	atlas	2018	53.32	942	1076	Dest SRM	72.4	Source SRM	16.54	1.15	144.44	9.42	1085.07	1087.6
	dteam	3488	61.32	1349	2139	Dest SRM	98.74	Other	0.98	0.93	81.91	14.66	1260.74	1261.32
	lhcb	148	35.14	96	52	Dest SRM	92.31	Other	3.85	0.06	76.1	0.93	5.7	5.7
	ops	4	0	4	0					0	97.25	0.02	0	0
CERN-INFN	[All]	11492	42.31	6630	4862	Dest SRM	43.85	Other	37.7	1.13	395.77	3.21	7514.29	7614.84
CERN-CERN	[All]	1536	39.71	926	610	Source SRM	58.36	Dest SRM	15.9	0.07	287.71	0.38	67.89	69.08
CERN-ASCC	[All]	6851	23.54	5238	1613	Source SRM	50.84	Other	28.89	1.14	1098.6	1.08	5955.81	6080.58
CERN-GRIDKA	[All]	12755	21.38	10028	2727	Source SRM	64.36	Other	32.53	0.87	371.97	3.19	8762.02	8767.53
CERN-TRIUMF	[All]	2244	20.63	1781	463	Other	61.77	Source SRM	31.1	1.04	395.15	3.63	1847.25	1917.13
CERN-BNL	[All]	13975	19.42	11261	2714	Source SRM	69.97	Other	24.24	0.44	190.38	3.41	4951.59	4960.34
CERN-IN2P3	[All]	11697	13.76	10087	1610	Source SRM	48.57	Other	47.45	1.22	296.21	5.33	12329.63	12329.63
CERN-FNAL	[All]	917	4.58	875	42	Transfer	97.62	Other	2.38	0	379.88	0	0	0

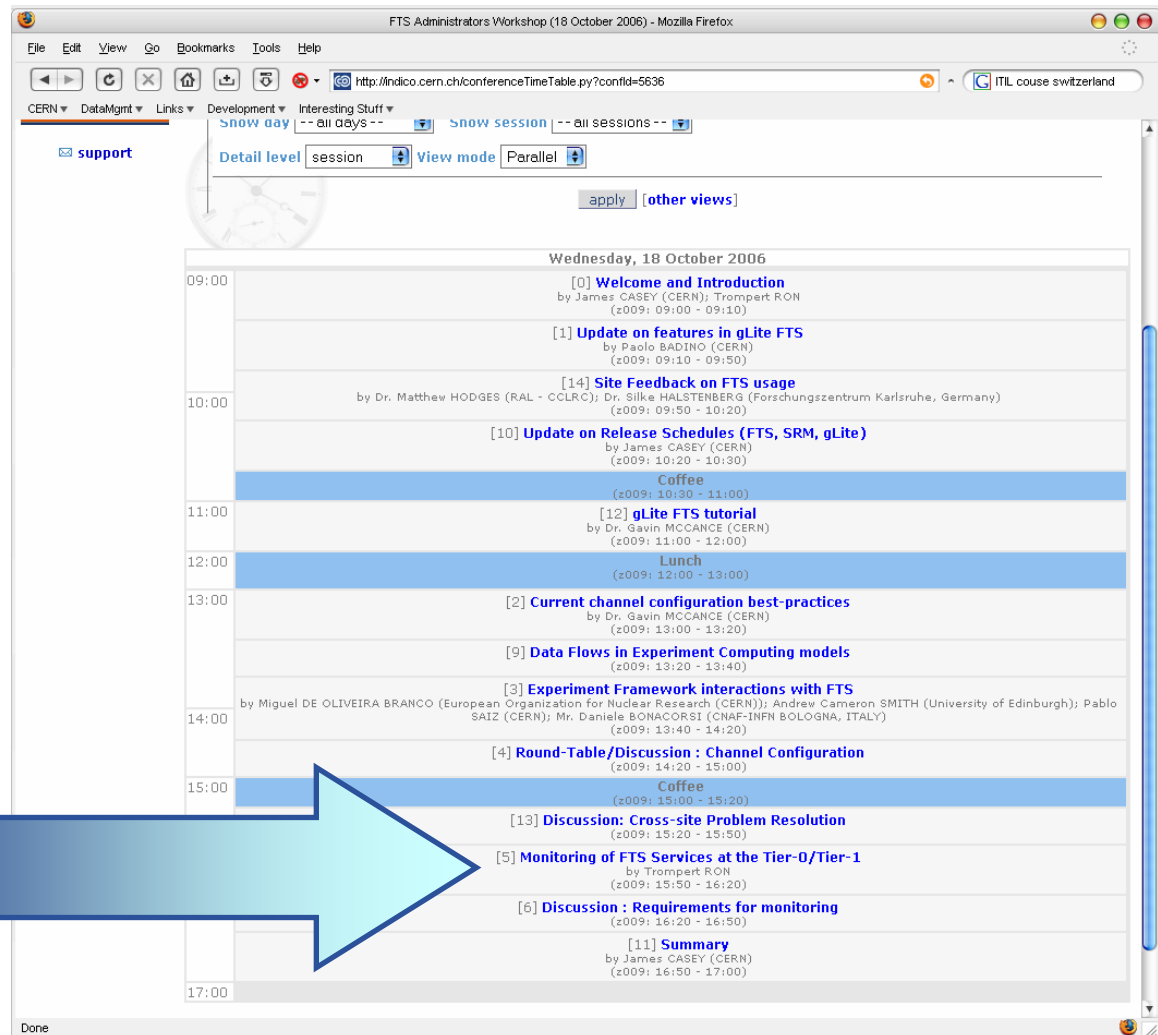
Click on the Channel Name to show the VO details

Done

- **The missing piece**
- **The plan is to integrate with existing monitoring tools, providing direct feedback (notification, events)**
- **Still under evaluation**
 - Requires a schema revision (see FTS 2.0)
- **What about the FileTransferStats?**
 - Obsolete
 - Support issues
 - Didn't provide enough information to debug the problems (DB access was still needed)
 - The plan is to publish the same information through a Monitoring system

⇒ Ron's session this afternoon

- Implementations
- Requirements
 - Sites
 - Users
- Ideas



FTS Administrators Workshop (18 October 2006) - Mozilla Firefox

http://indico.cern.ch/conferenceTimeTable.py?confid=5636

ITIL course switzerland

support

Detail level: session View mode: Parallel

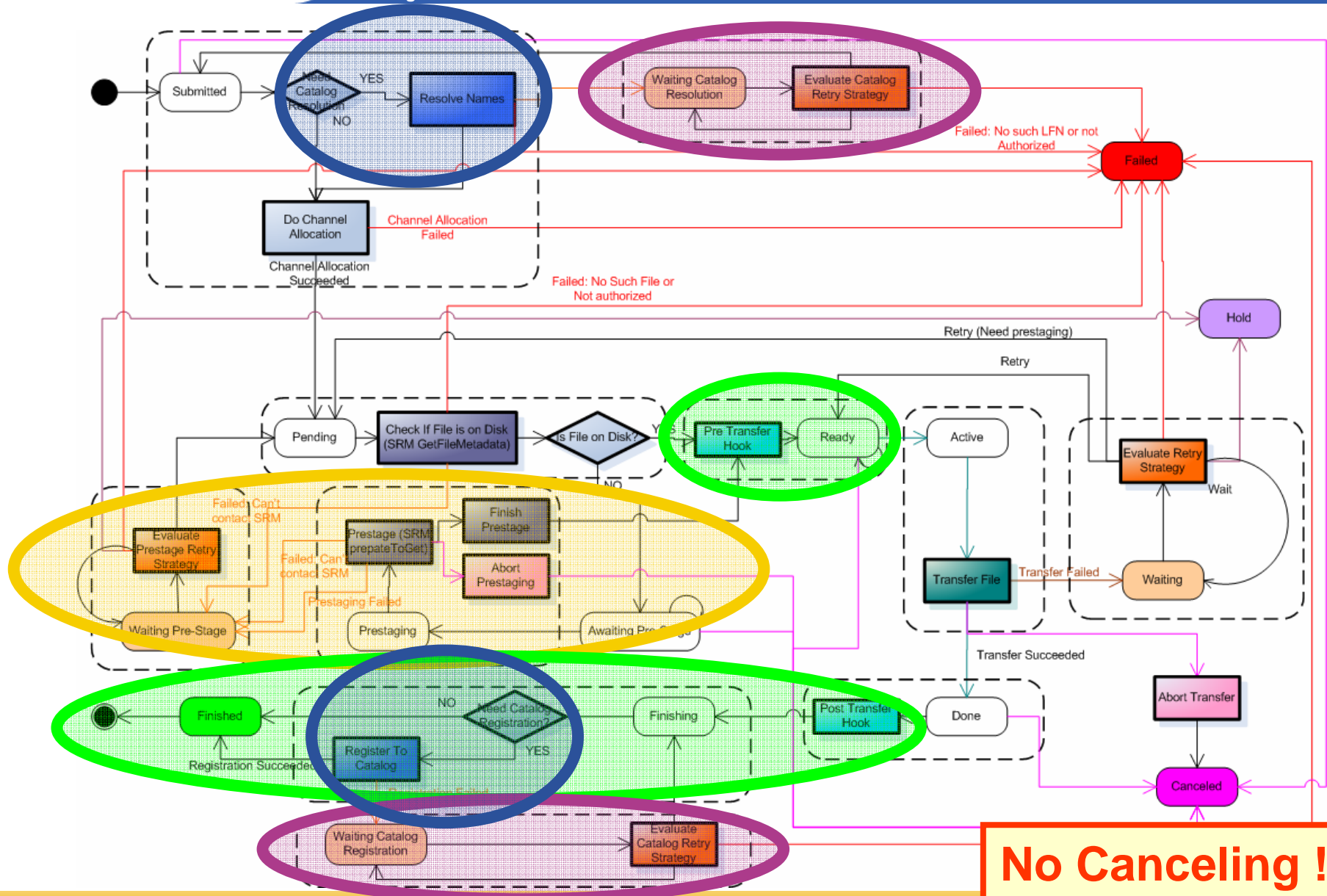
apply [other views]

Wednesday, 18 October 2006

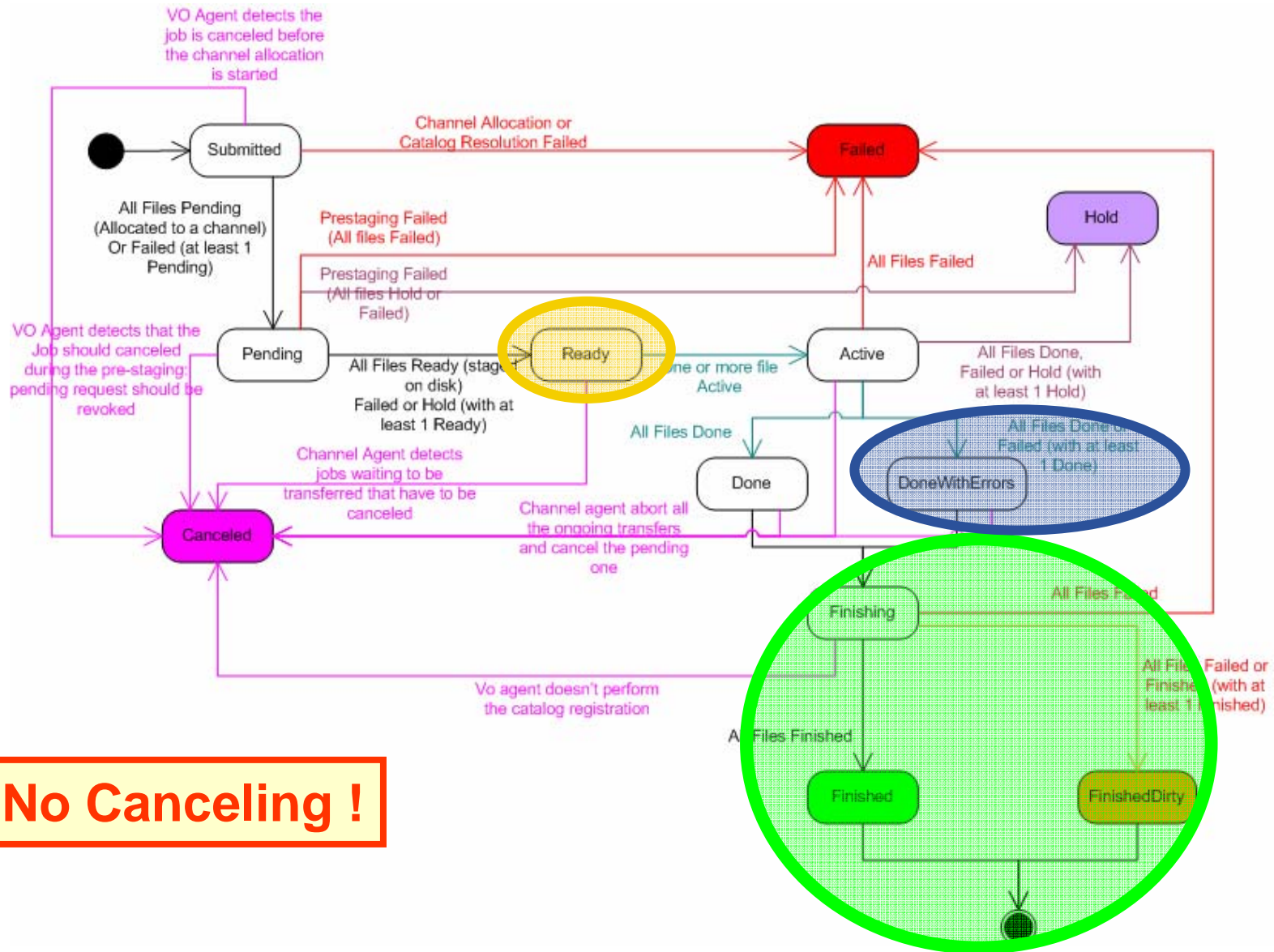
09:00	[0] Welcome and Introduction by James CASEY (CERN); Trompert RON (z009: 09:00 - 09:10)
	[1] Update on features in gLite FTS by Paolo BADINO (CERN) (z009: 09:10 - 09:50)
10:00	[14] Site Feedback on FTS usage by Dr. Matthew HODGES (RAL - CCLRC); Dr. Silke HALSTENBERG (Forschungszentrum Karlsruhe, Germany) (z009: 09:50 - 10:20)
	[10] Update on Release Schedules (FTS, SRM, gLite) by James CASEY (CERN) (z009: 10:20 - 10:30)
	Coffee (z009: 10:30 - 11:00)
11:00	[12] gLite FTS tutorial by Dr. Gavin MCCANCE (CERN) (z009: 11:00 - 12:00)
12:00	Lunch (z009: 12:00 - 13:00)
13:00	[2] Current channel configuration best-practices by Dr. Gavin MCCANCE (CERN) (z009: 13:00 - 13:20)
	[9] Data Flows in Experiment Computing models (z009: 13:20 - 13:40)
	[3] Experiment Framework interactions with FTS by Miguel DE OLIVEIRA BRANCO (European Organization for Nuclear Research (CERN)); Andrew Cameron SMITH (University of Edinburgh); Pablo SAIZ (CERN); Mr. Daniele BONACORSI (CNAF-INFN BOLOGNA, ITALY) (z009: 13:40 - 14:20)
14:00	[4] Round-Table/Discussion: Channel Configuration (z009: 14:20 - 15:00)
15:00	Coffee (z009: 15:00 - 15:20)
	[13] Discussion: Cross-site Problem Resolution (z009: 15:20 - 15:50)
	[5] Monitoring of FTS Services at the Tier-0/Tier-1 by Trompert RON (z009: 15:50 - 16:20)
	[6] Discussion: Requirements for monitoring (z009: 16:20 - 16:50)
	[11] Summary by James CASEY (CERN) (z009: 16:50 - 17:00)
17:00	

Done

- **What's new?**
 - New Schema and State Machines
 - Reviewed database schema to avoid row locking
 - *Performance improvement*
 - *Reduce the deadlock risk*
 - Hooks for extensibility
 - Delegation
 - No need to pass the MyProxy passphrase anymore
 - VOMS proxy used
 - SRM 2.2
- **Backward compatible CLI !!**



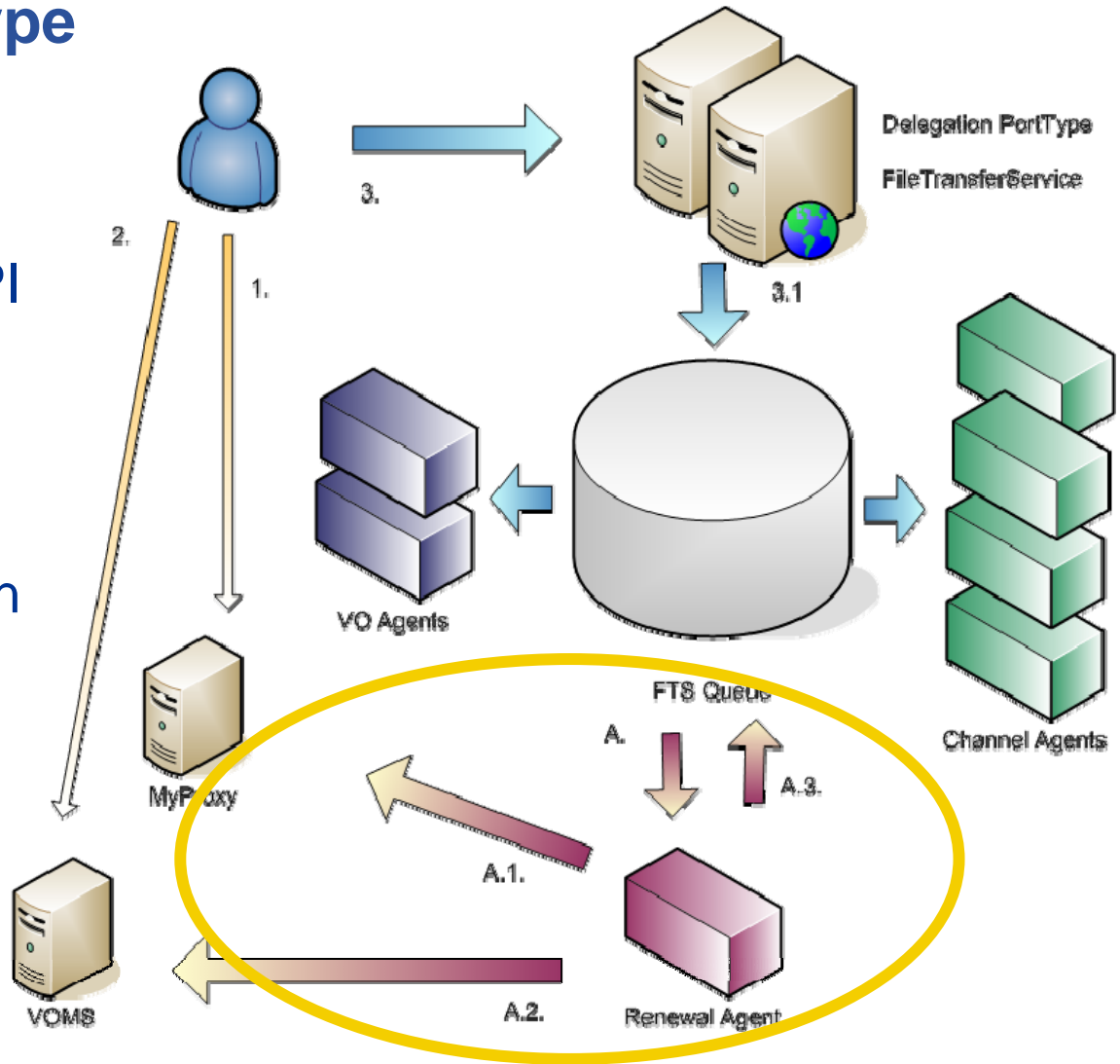
No Canceling !



No Canceling !

- **User Credentials retrieved from MyProxy**
 - Transfers
 - Catalog Interaction
 - ServiceDiscovery
- **Agents are Authorized Retrievers**
 - ...problematic
- **Delegation & Proxy Renewal**
 - Client delegates the credential to the FTS server
 - The FTS can then renews the credential
 - The FTS can now contact the SRM with the VOMS attributes
 - Non need for a dedicated MyProxy server

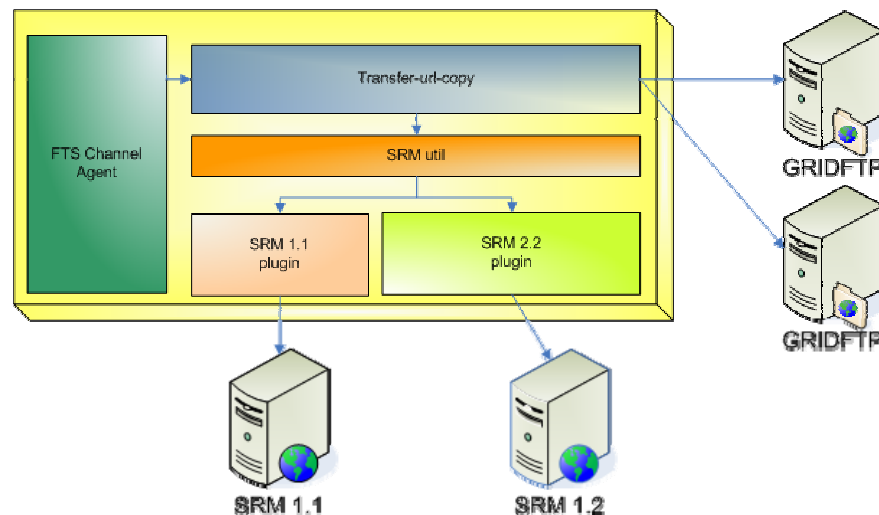
- Delegation PortType
- New Agent
 - Proxy Renewal API (same as WMS)
- Updated CLI
 - Hide the delegation “complexity”



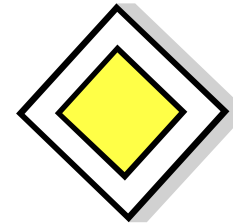
- **SRM Abstraction Layer**

- Internal
- Only for the methods required by the FTS
- Interface designed from SRM 2.2
- SRM 1.1 implementation will ignore unsupported features

➤ **SRM 1.1 ↔ SRM 2.2 interoperability**

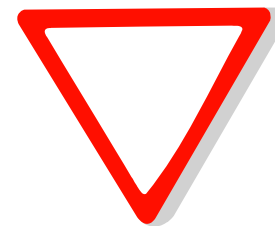


- **Priorities**
 - Stability
 - Reliability

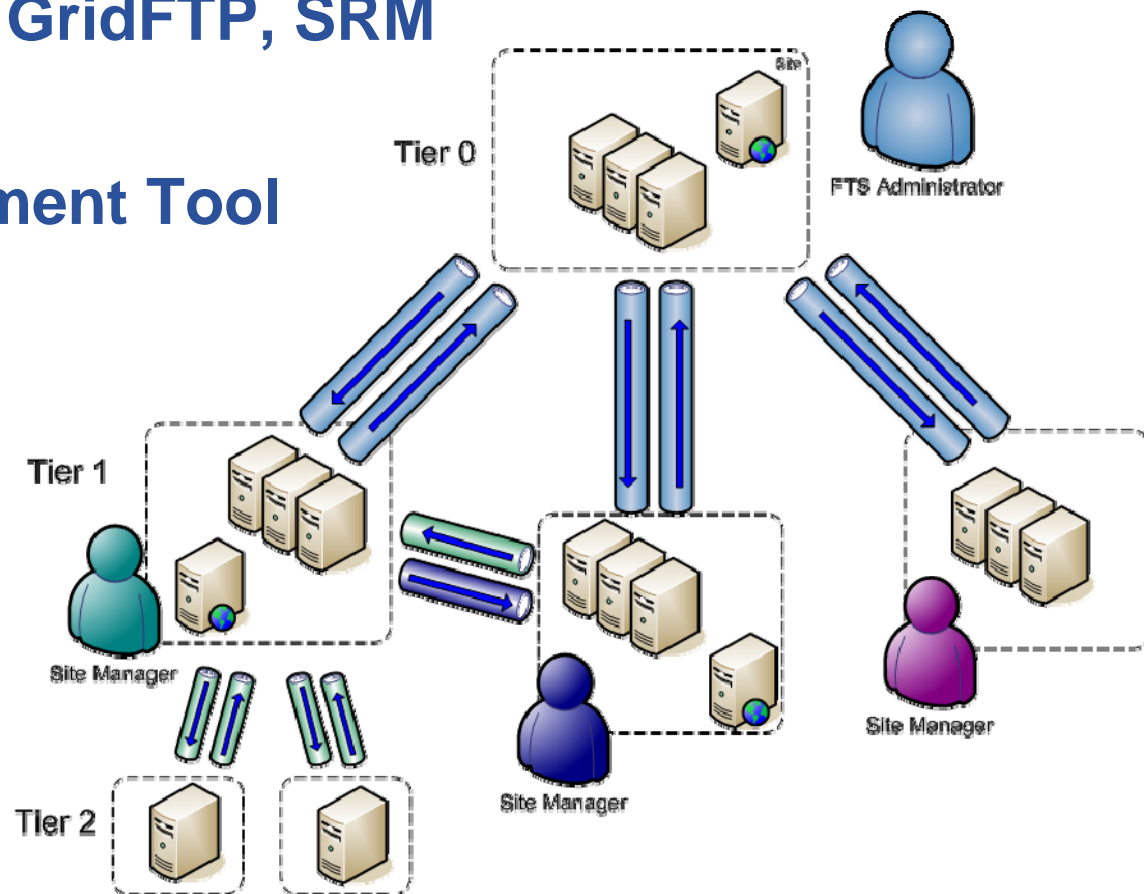


Reporting & Monitoring
Procedures
Bug fixes

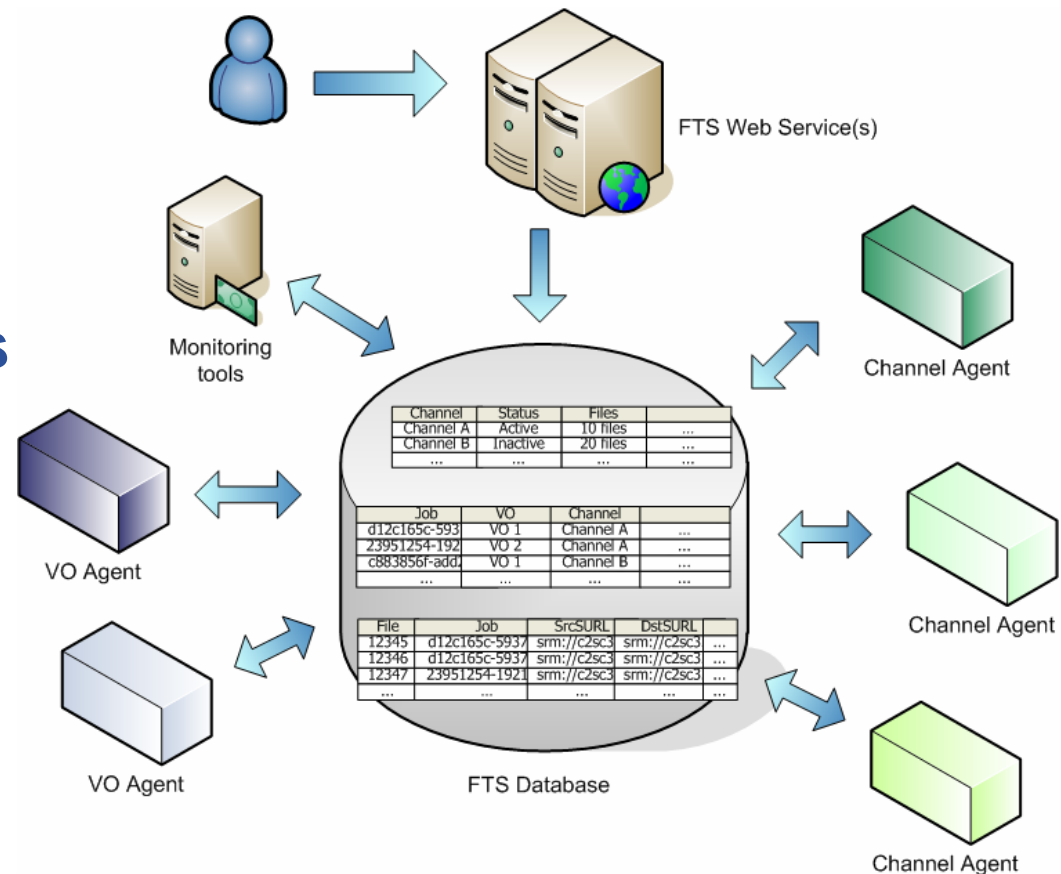
- **FTS 2.0 is coming:**
 - Delegation
 - SRM 2.2
 - Schema improvement
- **On the TODO list**
 - Pre-staging
 - Extend Channel Definition (“clouds”)
 - Hooks/Catalog plug-ins
 - Notifications



- Low Level, point to point data movement service
- Asynchronous transfers
- Based on Globus GridFTP, SRM
- Retry policies
- Transfer Management Tool
 - Channels



- **FTS Web Service**
 - User, Administration
- **File Transfer Queue**
- **File Transfer Agents**
 - VO Agents
 - Channels Agents
- **Monitoring Tools**



- **FTS Wiki**

- Main

- <https://twiki.cern.ch/twiki/bin/view/EGEE/FTS>

- Delegation

- <https://twiki.cern.ch/twiki/bin/view/EGEE/FTSDelegationMyProxy>

- Workplan

- <https://twiki.cern.ch/twiki/bin/view/EGEE/DMFtsWorkPlan>

- F.A.Q.

- <https://twiki.cern.ch/twiki/bin/view/EGEE/DMFtsSupport>

