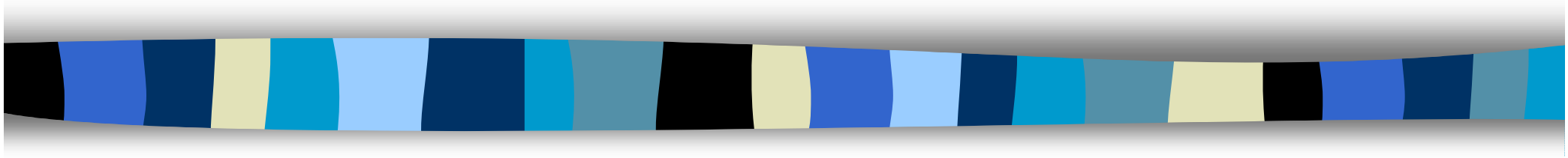
TSTG GeneralMeeting



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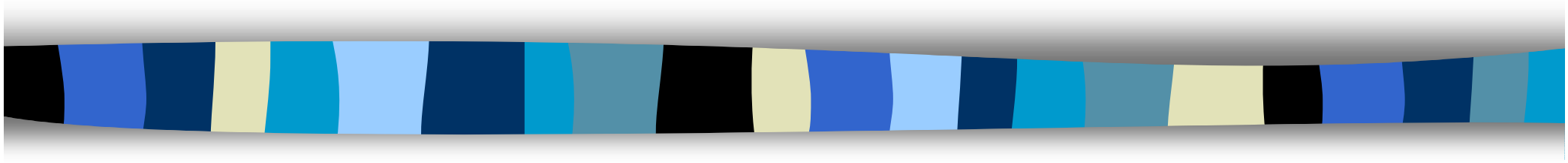
LAL-Orsay/IN2P3/CNRS
& LCG

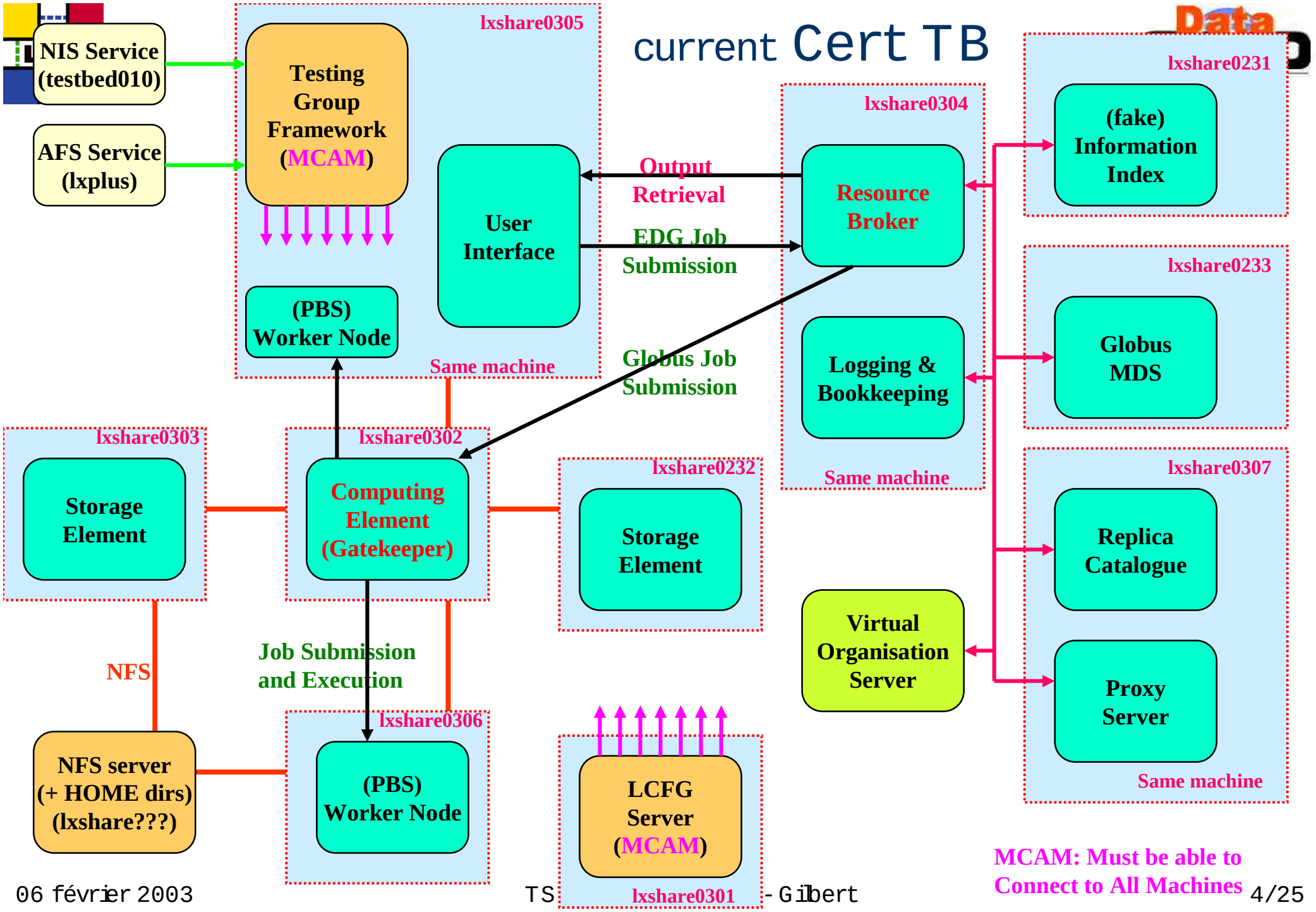
Description of Testing Suites section



Testing Suites: Goals

- Testing Suites can be aiming at 4 kinds of use cases
  - Check that a GRID cluster is correctly installed and running
  - Check that a newly built M/W release is coherent and complete
  - Check that a Production cluster is fully operational
  - Check that a Testing Suite is adequate, and covers all bases
- The current goal for us is building/testing the Main Script
  - meaning the 4th use case
  - this Main Script will give access to all Suites thru switches
- To check our suites, we need
  - a well known/understood M/W version (currently edg-1.4.3)
  - a full GRID cluster with a controlled install
    - available at CERN
    - installed thru LCFG (reproducible)
    - UI, CE, 2xSEs, RB, LB, WN, MDS, (BDII), PX, RC
      - there are 2 SEs to allow for full data managements tests
  - this GRID cluster will evolve to something more realistic when needs arise

current Cert TB



Testing Suites: Structure

- These tools currently exist under 2 forms
  - GUI tool installed and running locally on each machine of the cluster
    - required by sysadmins when achieving manual or non-standards install
  - a large Main Script being run centrally from a single machine
    - covering however all the components of the cluster
    - implies some constraining requirements for accessing the remote nodes
    - allows for running in an automated framework, or thru a cron job
      - for Build checking or Production cluster checking
- They share basic scripts as much as possible
- I'll mainly cover the 2nd point (the large Main Script)
- Two languages used: **bash** and **Perl** (5.005003)
  - bash used for building basic scripts (mainly Install&Config level, HTML presenter)
  - But slowly becoming minority, because Perl offering more functionalities
    - while being a little bit more cryptic
  - Then it is strongly advised to use Perl to develop new tools
    - we will have to wrap bash scripts to plug them into OO Perl frame
  - We want however to preserve the base of already available/written tools
    - could be even advisable to re-use existing core functions to write new I&C modules

Testing Suites: Functionalities

- There are many areas to cover in these tests
  - even when running high level tests (M/W global functionality check, or cluster stress testing), one has to make sure that the lower levels are fine
- We currently distinguish these levels:
  - **Install & Configuration** level
    - checking existence of RPMs, config and log files, access priviledges, and so on
  - **Unit Testing** (and Daemon testing ?): single component functionality checks
    - ex: is the Globus gatekeeper running fine on this CE ?
  - **Global tests**: full functionality checks, involving several components, with single jobs, embedding different kinds of functionalities
    - ex: insertion of a new entry in the RC, + creation and replication of the file
    - ex: auto-coherency of the II, coherency with installed resources, is the II consistent with a smooth running of the GRID cluster ?
  - **Stress testing**: job storms and so on
    - ex: running several 100s of jobs, retrieving their outputs, checking it's OK
    - ex: same thing with copy storms
  - Stability and **Robustness** testing (standby right now)
    - is everything coming up fine and running after a reboot/shutdown/breakdown ?
    - probably aiming at Production cluster tests only
    - are **Security issues** part of this item ?

What is a Suite ?

- Proposal: a Suite is a bundle of individual tests that allow to check all the different aspects of a given component
  - meaning that, to be able to declare a component is operational, we will have to run a suite including all of I&C tests, Unit tests, Global tests and Stress tests for that specific component
  - it could obviously happen that several Suites could overlap
- What is the Main Script then ?
  - Simple answer: it should allow for running in an easy way several different Suites selected thru switches
    - the upper levels switches should in turn switch on lower level tests to allow for more flexibility
  - So the Main Script will look like
    - a collection of high level Suites, if we look at switch level
    - or a collection of low level Suites, if one looks at individual component level
  - Whenever possible, building a new high level Suite should require to bundle only low levels switches rather than combining high levels switches
    - to avoid too much overlapping in the tests

About configuration files

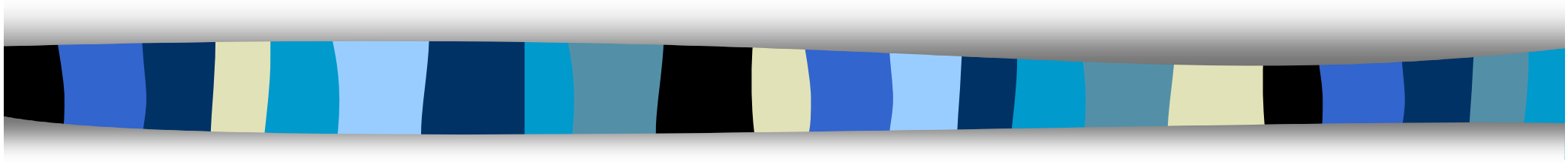
- It is foreseen to use 3 different configuration files
  - the testing framework configuration file
    - describing the path to the scripts, and other utility variables
  - the site configuration file
    - describing the cluster where the tests will be running
    - it is currently built from or extracted from the LCFG config file
  - the M/W configuration file
    - where are located the M/W version
    - containing pointers to version specific features
    - hope to have this one very small
- These config files are sourced by the Main Script upon starting
  - and every value is inherited from this
- We should stick to this model
  - and avoid having too many files to source to describe the different parts
  - no embedded sourcing: no file calling a file calling another file...
    - unless at the very beginning of the implementation process
  - clear sections into the main file are required
    - together with explanations :-)

Cert TB status (edg-1.4.3)

- Current machines
  - lxshare0301 - LCFG server
  - lxshare0302 - CE (+WN2)
  - lxshare0303 - SE1
  - lxshare0304 - RB
  - lxshare0305 - UI
  - lxshare0306 - WN1
    - PBS only
  - lxshare0307 - RC+PX
  - lxshare0231 - BDII
  - lxshare0232 - SE2
  - lxshare0233 - MDS

- Current « tstgrp » users
  - +aformic
  - +barcelo
  - +bettini
  - +cavalli
  - +dqing
  - +fchollet
  - +fede
  - +gmerino
  - +grodid
  - +legre
  - +louis
  - +mandjavi
  - +mdavid
  - +metery
  - +neyroud
  - +reale
  - +serra
  - +silvestre

Testing Suites Status section



Testing Suites: Status

- Install&Config level
  - These are mainly static tests
  - For CE, SE, RB, LB, UI, WN
    - Basics scripts: ready
    - Merging to Main Script: ready for all but SE
    - Migration towards edg-1.4.3, and testing: ready for all but SE
    - Presenter wrapping: ready for RB only
      - ideas available
  - For MDS, (BDII), PX, RC
    - nothing ready yet
    - looking for manpower
  - later: R-GMA, VO Server, RLS
    - looking for manpower as well

Testing Suites: Status (2)

- Daemon Testing
  - some of the daemon testing is currently part of previous level
    - status: fair
    - would rather have it here, but no serious harm
  - will have to integrate monitoring sensors developed elsewhere in EDG
    - no manpower assigned
- Unit Testing
  - many tools provided thru the IT team already
    - Gatekeeper, GridFTP, II, MDS
    - status:
      - scripts under PerlOO ready
      - merged into the Main Script
      - Presenter feature not ready yet
        - » ideas exist, manpower assigned
  - most probably missing many areas, IMHO
    - will have to dig into material provided thru the WPs (WP1 Testing Plan ?)
    - will have to cross-check with input from 'bose cannons

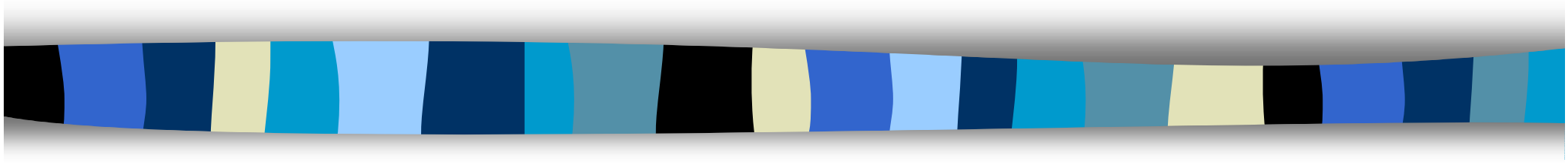
Testing Suites: Status (3)

- GlobalTesting
  - improved tools provided thru the IT eam are available
    - status: fair, merged into the Main Script, PerlOO
    - no presenter wrapping yet
    - overall cluster testing with simple requests
      - full UI+RB+CE functionality
      - long job features
      - BrokerInfo functionality
  - II Consistency check (to allow for smooth running)
    - being developed, ideas exist, no manpower clearly assigned
- Stress Testing
  - framework for a job storm already exists
    - the script for submitting it also exists
    - easy to adapt to PerlOO
  - merged into the Main Script
  - submitting a simple JDL file
  - no presenter wrapping yet

Currently Available in the Main Script

- The Main Script is now just a little bit more than a skeleton
  - sourcing the 2 conf files (site & edg-test)
  - specifying the location of the Perl tools and libs (Cal's one)
  - calling some high level suites (mostly with no Presenter parsing)
  - neither clear documentation yet, nor options/comments
- Available Suites
  - CE: to exercise Globus Gatekeeper (currently: CE only)
  - Ses: exercising GridFTP+GridFTPUmask Cal's tests on both SE nodes
  - FTP: exercising GridFTP between all of CE, SE's, RB
  - I&C: running Security_ & RB_config_test
  - RB: running several Cal's tests
    - HelloWorld, HelloScript, "Sleep 30s", "CheckSum size=1Mb", BrokerInfo
  - MDS: running CheckConsistency & CheckGRIS Cal's tests, on BDII & MDS
  - GG: my Job Storm (mostly as a plugging exercise), running 100 requests
    - with a rather simple jdl script
  - DNS: running Cal's ReverseDNS test on all of CE, SE's, RB, PX

HTML Presenter section



Presenting the results (IFAE HTML parser)

- Choosen: the output of each test will be automatically parsed
  - they will be merged onto one or several HTML pages
  - under the form of a result matrix (or matrices)
  - several tests will be merged to allow for fast scanning
- Every entry should itself be a link
  - towards a more detailed page, allowing for in depth checking
  - titles and/or description of each test (hence its meaning) will also be available on the same page, thru links
- A (rather simple) example is available here:
  - http://grodid.home.cern.ch/grodid/test3101/

QuickTime™ et un décompresseur TIFF (LZW) sont requis pour visionner cette image.

About the PerlOO framework

- This is inherited and adapted from Cal
- Current OO methods for the BaseTest Class

• sub new	NoOver
• sub setContext	SubClass
• sub process	NoOver
• sub checkArguments	Utility
• sub setDefaults	Utility
• sub checkPrerequisites	SubClass
• sub setupTest	SubClass
• sub runTest	SubClass
• sub evaluateTest	SubClass
• sub cleanup	SubClass
• sub printHelp	NoOver
• sub printDesc	NoOver
• sub addOption	Utility
• sub setErrorMessage	Utility
• sub checkError	Utility

- Proposal: add new methods for
  - analyzing the output
  - formatting the results
    - sub buildConfFile SubClass
    - sub runParserScript NoOver
  - they will be called from the evaluatetest or process methods

A Checking transfers to /tmp

- Using prefix/value:/tmp,0.066070463042706 3
  - Check local--> lxshare0303.cern.ch: [OK] [OK] [OK]
  - Check lxshare0303.cern.ch --> lxshare0232.cern.ch: [OK] [OK] [OK]
  - Check lxshare0303.cern.ch --> lxshare0302.cern.ch: [OK] [OK] [OK]
  - Check lxshare0303.cern.ch --> lxshare0304.cern.ch: [OK] [OK] [OK]
- Using prefix/value:/tmp,0.838301313109696
  - Check local--> lxshare0232.cern.ch: [OK] [OK] [OK]
  - Check lxshare0232.cern.ch --> lxshare0303.cern.ch: [OK] [OK] [OK]
  - Check lxshare0232.cern.ch --> lxshare0302.cern.ch: [OK] [OK] [OK]
  - Check lxshare0232.cern.ch --> lxshare0304.cern.ch: [OK] [OK] [OK]
- Using prefix/value:/tmp,0.649601413402706
  - Check local--> lxshare0302.cern.ch: [OK] [OK] [OK]
  - Check lxshare0302.cern.ch --> lxshare0303.cern.ch: [OK] [OK] [OK]
  - Check lxshare0302.cern.ch --> lxshare0232.cern.ch: [OK] [OK] [OK]
  - Check lxshare0302.cern.ch --> lxshare0304.cern.ch: [OK] [OK] [OK]
- Using prefix/value:/tmp,0.318467741832137
  - Check local--> lxshare0304.cern.ch: [OK] [OK] [OK]
  - Check lxshare0304.cern.ch --> lxshare0303.cern.ch: [OK] [OK] [OK]
  - Check lxshare0304.cern.ch --> lxshare0232.cern.ch: [OK] [OK] [OK]
  - Check lxshare0304.cern.ch --> lxshare0302.cern.ch: [OK] [OK] [OK]

3 Checking transfers to ~

- Using prefix/value:~,0.417699105571955
  - Check local--> lxshare0303.cern.ch: [OK] [OK] [OK]
  - Check lxshare0303.cern.ch --> lxshare0232.cern.ch: [OK] [OK] [OK]
  - Check lxshare0303.cern.ch --> lxshare0302.cern.ch: [OK] [OK] [OK]
  - Check lxshare0303.cern.ch --> lxshare0304.cern.ch: [OK] [OK] [OK]
- Using prefix/value:~,0.446819024160504
  - Check local--> lxshare0232.cern.ch: [OK] [OK] [OK]
  - Check lxshare0232.cern.ch --> lxshare0303.cern.ch: [OK] [OK] [OK]
  - Check lxshare0232.cern.ch --> lxshare0302.cern.ch: [OK] [OK] [OK]
  - Check lxshare0232.cern.ch --> lxshare0304.cern.ch: [OK] [OK] [OK]
- Using prefix/value:~,0.801964308600873
  - Check local--> lxshare0302.cern.ch: [OK] [OK] [OK]
  - Check lxshare0302.cern.ch --> lxshare0303.cern.ch: [OK] [OK] [OK]
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  - Check lxshare0302.cern.ch --> lxshare0304.cern.ch: [OK] [OK] [OK]
- Using prefix/value:~,0.546492491848767
  - Check local--> lxshare0304.cern.ch: [OK] [OK] [OK]
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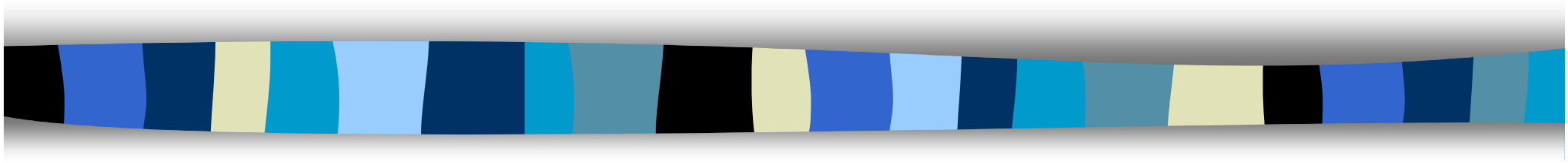
Manpower Issues section



Remaining Tasks & Manpower Issues

- This is a catalogue of non-assigned tasks
- Liaison man between EDG-ITeam and LCG-TSTG ??
  - Should help monitoring closely and identify precisely the areas where the M/W was change dramatically between current and next versions
    - allows integrating in advance these changes in the Testing Scripts
    - and allows merging of new scripts provided by the EDG developers
    - He/She must be an experienced expert to be efficient, acting part time
- Of course, one liaison man is required between VDT and TSTG
- About the Install&Config suites now
  - Merging the Tests into the TSTG Framework RM
  - One developer to create the missing modules (MDS, PX, RC, BDII?)
    - and later R-GMA and VO Server MR+GT ??
  - One developer to help migrating existing suites from edg-1.2.2 to edg-1.4.3
    - and testing them on the Cert TB FC + MR+GT ??
  - We strongly suggested to extend the mandate of 2 INFN developers beyond the end of year 2002 to allow for achieving these tasks

Manpower Issues (2)

- One developer for gathering and implementing (if needs arise) Unit Testing (and may be Daemon Testing): this are may not be wellcovered, IMHO
  - cf WP1 Testing Plan to seek in details ??
- Robustness Testing development: no urgent need, but we will not drop this item ??
- Integration to TSTG Main Script and Display tools of Cal+GG+JJB GlobalFuntionality Tests & Job Storms
  - Integration GG + ??
  - Parser for the HTML Presenter GM+FC+MB
  - JJB globaltest is currently rewritten in Perl, including more functionalities, and more flexibility AS + ??
- Development of a "Copy Storm" following the same model as for the job storm above
  - reusing the frame developed by GG for storms ??

Manpower Issues (3)

- Checking Information Index coherence with requirements
  - check that the values returned for each II objectClass allow for a smooth running of the TB
    - we miss reference values for this !
    - some work already began around that, within a Perlframe ?? + GG
- Security and Control issues
  - this is rather vague right now : we probably have to find a way to check that every piece of sensitive info is accurately protected EF ??
    - proxies, certificates, access rights and so on

Expectations for VDT testing

- What to provide ?
  - (Perl) Scripts for Install&Config level, as well as for Unit Testing, ASAP
  - Later, Robustness tests
  - Global functionality tests, if they have to differ from the EDG tests for the same level
  - Care of Stress Testing should be taken with the existing framework, reusing the previous levels scripts
- What will happen when the next version will be released ? As for our EDG partners:
  - the new version of the new tests scripts must be released altogether
  - or a specific advise should be sent, indicating how to update the testing scripts of the previous release