



PP VERSUS 2

Current Status and Future Plans

Angela Celozzi
CNMCA - Italy





Versus2 - Phase 4

Task 0: Help Desk, bugs fixing activities and release of VERSUS update

Task 1: Consolidation and fine tuning of the system

Task 2: Final Implementation of Feedback Files in VERSUS

Task 3: Integration of WMO BUFR format and GRIB2

Task 4: Implementation of Probabilistic Scores



Versus2 - Task0

Task 0: Help Desk, bugs fixing activities and release of VERSUS update

Main Activities

- Help Desk activities for VERSUS users
(forum www.meteoam.it/forum operative from February)
- Software maintenance
- Test/release of package and User and Technical Manuals updates (delivered to the users through ftp or forum)





Versus2 - Task0

View unanswered posts • View unread posts •

FORUM

- METEOAM Forum Generale

VERSUS

- Documentation Moderator: versus01
- Installation Moderator: versus01
- Bugs Report Moderator: versus01
- Suggestion Moderator: versus01
- Support Moderator: versus01
- F.A.Q.

Search... Search Advanced search

FAQ Register Login

Google 2, 21:58

Search... Search Advanced search

FAQ Members Logout [versus01]

Last visit was: 08/09/2012, 8:57

Mark forums read

	TOPICS	POSTS	LAST POST
	2	2	by administrator 31/01/2011, 14:34
	16	22	by versus01 06/09/2012, 12:46
	2	29	by filodea 20/04/2012, 10:38
	7	23	by vstauch 06/09/2012, 15:45
	2	6	by fgofa 15/03/2012, 12:21
	31	265	by versus01 06/09/2012, 12:47
	7	17	by versus01 15/06/2012, 10:32





Versus2 - Task1

- **Stress test of the system** and collections of stress tests results, analysis and identification of critical functionalities **Benchmarks** - <ftp.meteoam.it>

- Implementation of a **standard procedure** for fine tuning

Available in the Forum

- DB tuning
- PHP tuning



Versus2 - Task1

Review of Web GUI and internal functionalities for new facilities

PATCH07

- ✓ Computing of continuous scores for precipitation.
- ✓ The "Batch Execution" extended to Yearly interval.
- ✓ The "Batch Execution" will have the functionality to be restricted to fewer activities at a time.
- ✓ Configuring cross-model graphics as monthly or seasonal and consequently their batch execution
- ✓ Cross model of time series.
- ✓ Improvement of suspect observation menu.



Versus2 - Task0

Test/release of package and User and Technical Manuals updates

PATCH06 Tested and released in January

PATCH07 Complete from the end of April - now in test phase available in October

User and Technical Manuals updated at the PATCH06

The Installation Document (Installation step by step) is in updating phase (tuning php, mysql variables)

Available in the Forum Documentation Area





Versus2 - Phase 4

Task 0: Help Desk, bugs fixing activities and release of VERSUS update

Task 1: Consolidation and fine tuning of the system

Task 2: Final Implementation of Feedback Files in VERSUS

Task 3: Integration of WMO BUFR format and GRIB2

Task 4: Implementation of Probabilistic Scores





Versus2 - Phase 4

Task 0: Help Desk, bugs fixing activities and release of VERSUS update

Task 1: Consolidation and fine tuning of the system

Task 2: Final Implementation of Feedback Files in VERSUS
In the Phase 5++

Task 3: Integration of WMO BUFR format and GRIB2

Task 4: Implementation of Probabilistic Scores



Versus2 - Task2

Final Implementation of Feedback Files in VERSUS

This task was put on hold in favour of other activities seen as more important.

However the following activities were accomplished during the last years:

- ✓ DB Analysis in order to allow the storage of the crucial FF fields for the verification
- ✓ DB update
- ✓ TEST FF decode using the DWD software





Versus2 - Phase 4

Task 0: Help Desk, bugs fixing activities and release of VERSUS update

Task 1: Consolidation and fine tuning of the system

Task 2: Final Implementation of Feedback Files in VERSUS
In the Phase 5 ++

Task 3: Integration of WMO BUFR format
~~and ...~~
In the Phase 5

Task 4: Implementation of Probabilistic Scores





Versus2 - Task3

Task 3a: Update the system for the upload the WMO BUFR template and merge (in space and time) with the old format. A document describing the activity will be delivered and approved in advance

The Document delivered and approved
(suggestions by V.Stauch and P.Kaufmann)

Task 3b: Update the system for the treatment of forecasts produce coded in GRIB2 format



COSMO POLICY





Versus2 - Phase 4

Task 0: Help Desk, bugs fixing activities and release of VERSUS update

Task 1: Consolidation and fine tuning of the system

Task 2: Final Implementation of Feedback Files in VERSUS
In the Phase 5 ++

Task 3: Integration of WMO BUFR format
~~and ...~~
In the Phase 5

Task 4: Implementation of Probabilistic Scores





Versus2 - Task4

Pre-task: Description of "R" package for EPS verification

Reference document for description of "R" package for Prob. verification released (A. Boundel, F. Gofa)

Task 4a: Implementation of "R" package in VERSUS

Task 4b: GUI update for new functionalities.

ON GOING

Ready in DECEMBER 2012



Versus2 - Task4

In the Patch08 (release scheduled for December 2012),
VERSUS will be able to calculate the Following
Statistical Indexes:

- ✓ Brier Score and its decomposition
- ✓ Brier Skill Score
- ✓ Ranked Probability Score and Skill Score

And of the following plots:

- ✓ Rank Histogram
- ✓ ROC Curve (and ROC area)
- ✓ Reliability Diagram (with Sharpness Histogram)
- ✓ Cost/Loss Ratio

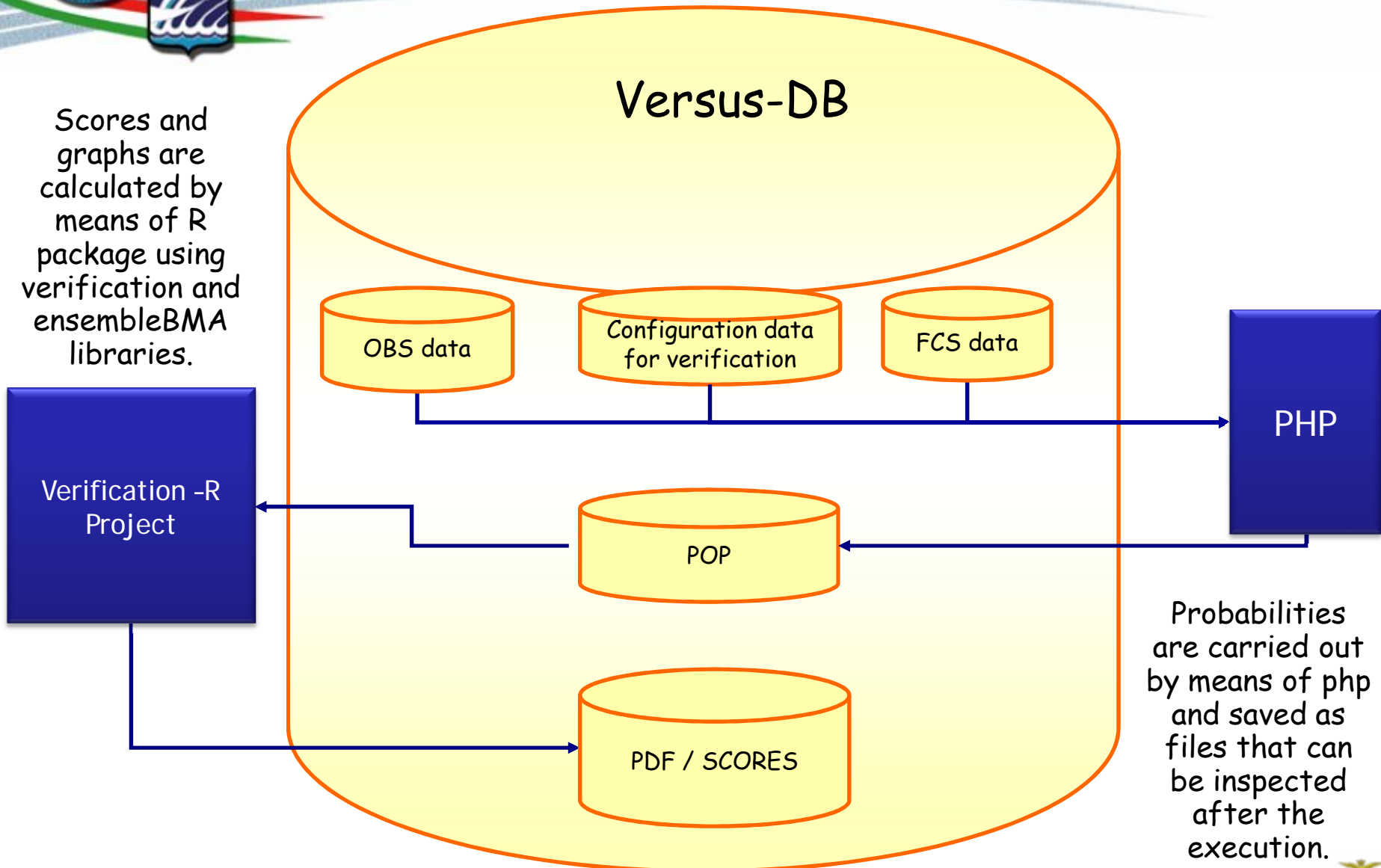
EPS verification available for standard Verification

- Continuous parameter (on going)
- Precipitation



VERSUS EPS- Architectural Design

Scores and graphs are calculated by means of R package using verification and ensembleBMA libraries.



Probabilities are carried out by means of php and saved as files that can be inspected after the execution.





EPS: Registration

Standard (EPS)

Registration

Description: EPS monthly (MECE)

Stratification: Pratica di Mare

Date: Monthly

Frequency: Frequency

Step: Start 24 End 120 Interval 24

Observation

Parameter: PRECIPITATION - KG/M**2 - 13021

Forecast

Model: COSMO-LEPS-131-80-2

Run 0

Members

- Member 1
- Member 2
- Member 3
- Member 4
- Member 5
- Member 6

Grid: Lat1: -16.125; Lon1: -15.75; Lat2: 9.75; Lon2: 16.125

Parameter: Precipitation - mm - 2

Method: 06) Mean of points Circle R=15 km (mean_radius param.=)

Threshold

Selected Thresholds: [0, 1], [1, 10], [10, 20], [20, 25], [25, 9999]

Insert Thresholds: From-To

From: To:

Delete Add

Scores: BRIER, BRIER SKILL, BRIER DECOMPOSITION, RPS, RPSS, RPS.dim

Diagrams: ROC, Reliability, Cost-Loss, Rank

Save

It's possible to choose the members for the Verification

Scores and Diagrams are fixed





EPS: Execution

EPS Diagrams									
Periodical Monthly-Surface									
From: 2012-04-01 To: 2012-04-30									
Run: 0									
Description	Date	Data Avail.	Susp. OBS	Numeric Results	Graphic				
					Modify	Show	Down.	Delete	
EPS Pratica di Mare (non MECE)	April 2012	Yes					PDF		
[TOTAL PRECIPITATION]									
EPS Pratica di Mare (MECE)	April 2012	Yes					PDF		
[TOTAL PRECIPITATION]									

<< 1 >>

Results: 2

Back

After the execution of a verification, the system give the capability to:

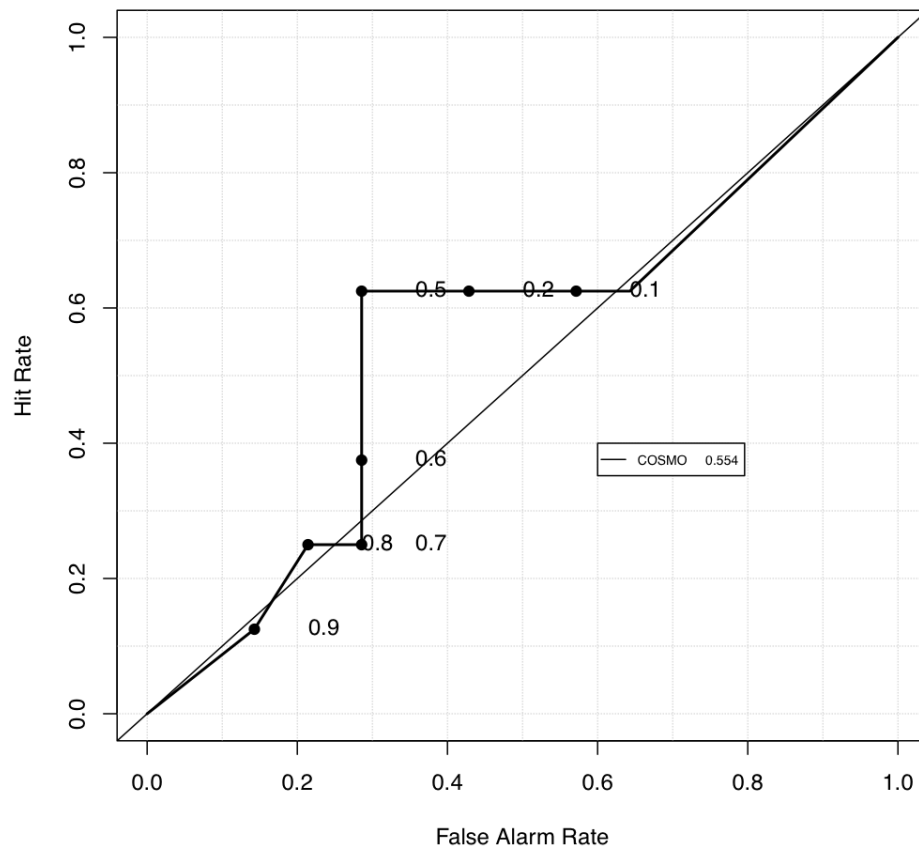
- Get the scores value
- Get the probabilities value (new icon)
- Run graphics for numerical scores
- Download pdf graphs



EPS Graphic: Some Examples

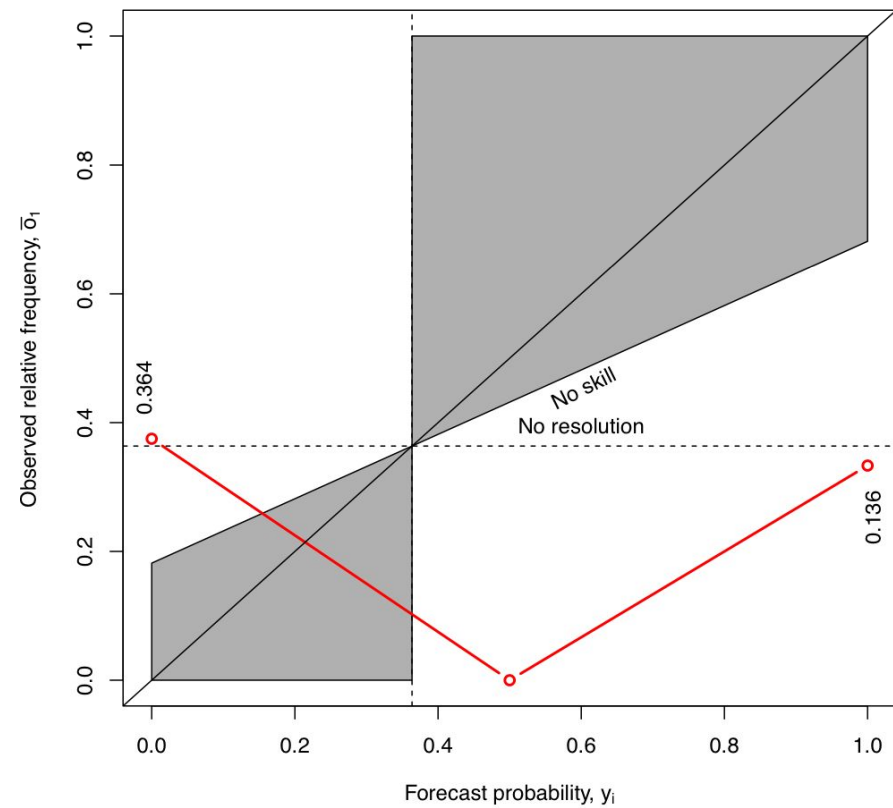
ROC

From: 2012-04-01 To: 2012-04-30 Step: 24 Th: 1 -9999



Reliability

From: 2012-04-01 To: 2012-04-30 Step: 24 Th: 1 -9999

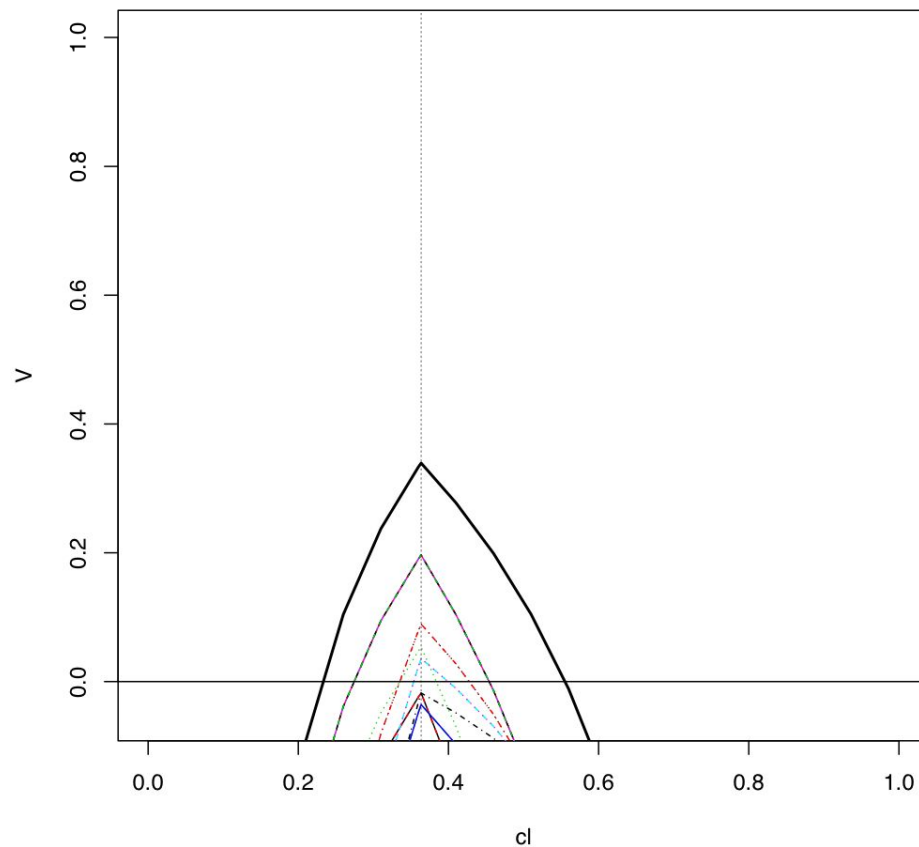




EPS Graphic: Some Examples

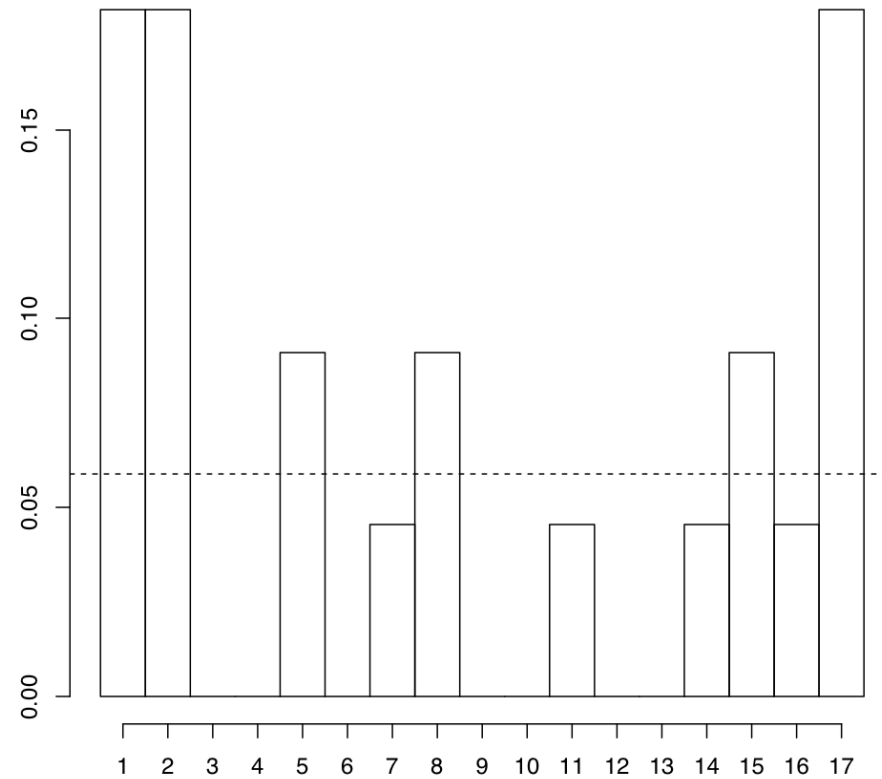
Cost Loss

From: 2012-04-01 To: 2012-04-30 Step: 24 Th: 1 -9999



Rank

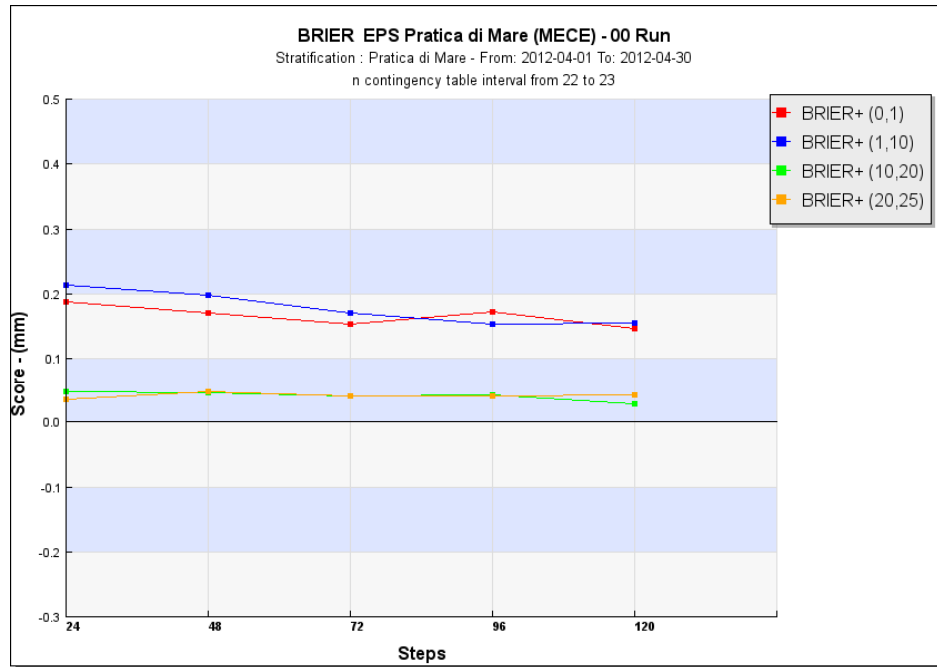
Verification Rank Histogram



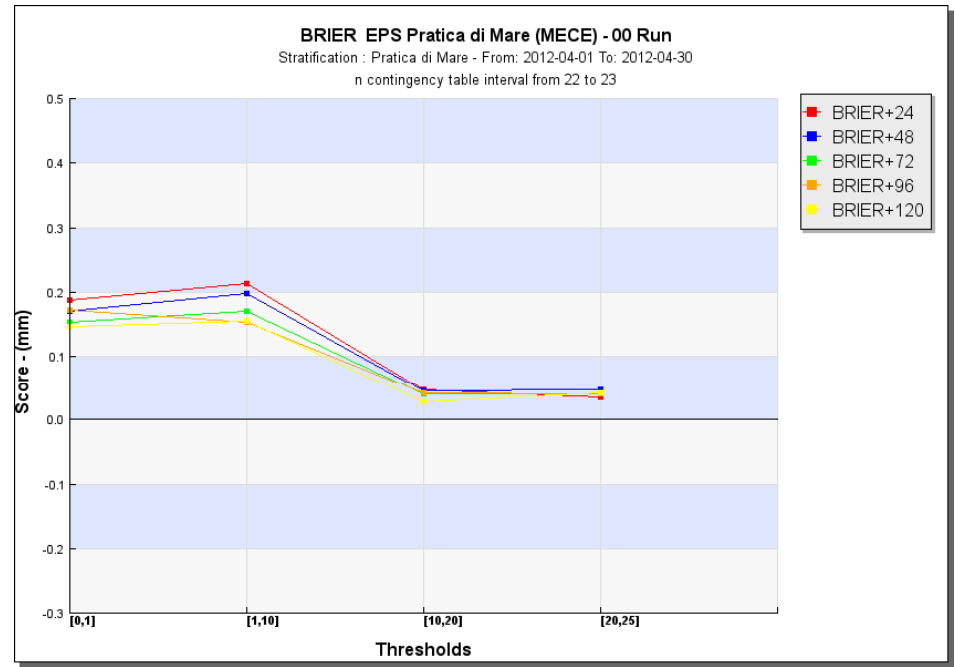


EPS Graphic: Some Examples

Brier Score



By thresholds

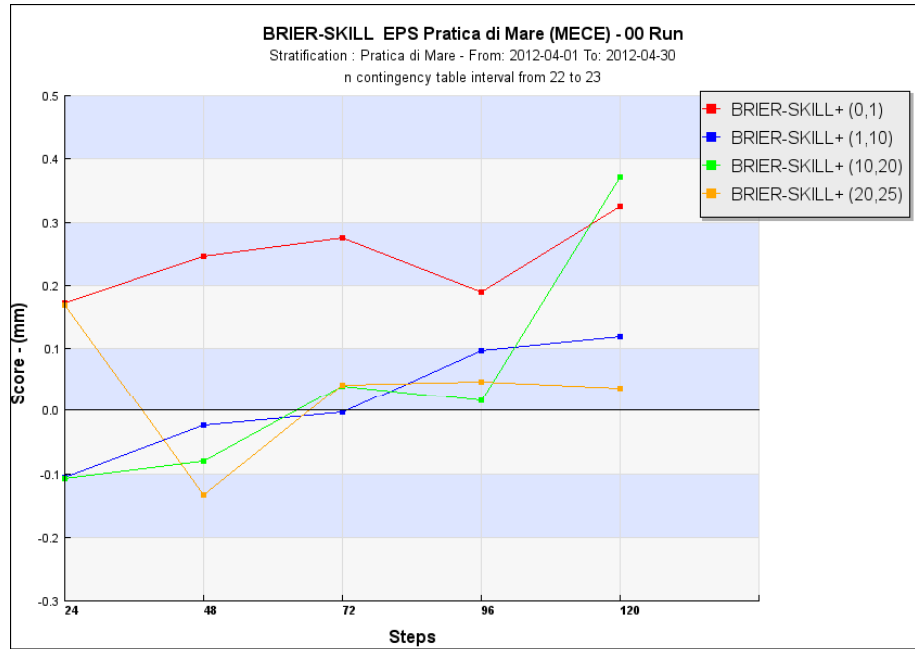


By steps

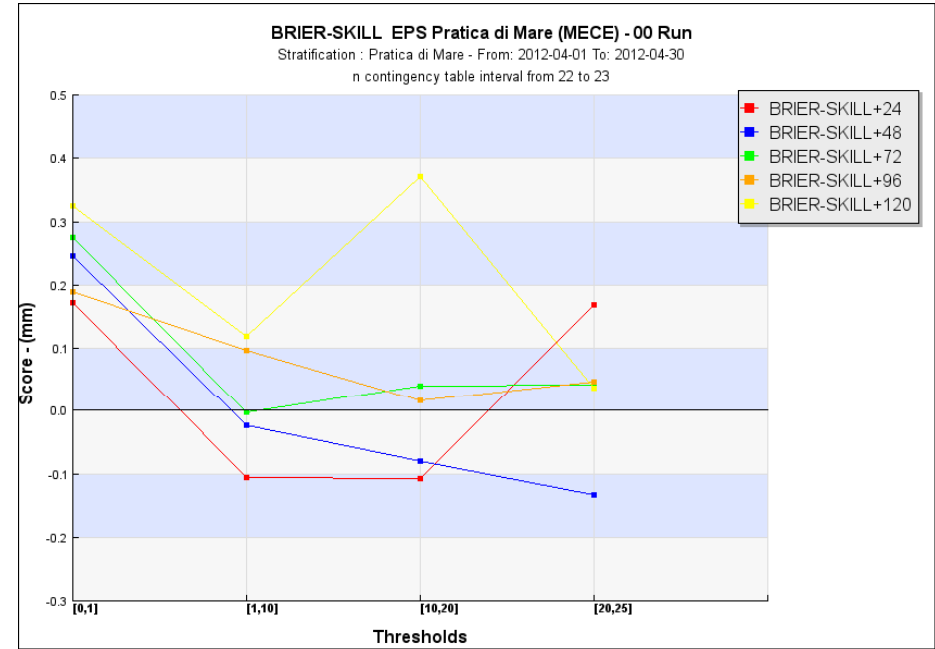


EPS Graphic: Some Examples

Brier Skill Score



By thresholds



By steps





Versus2 - Phase 4

Task 0: Help Desk, bugs fixing activities and release of VERSUS update

Task 1: Consolidation and fine tuning of the system

Task 2: Final Implementation of Feedback Files in VERSUS
In the Phase 5 ++

Task 3: Integration of WMO BUFR format and ~~...~~
In the Phase 5

Task 4: Implementation of Probabilistic Scores





Versus2

From
the Phase 4
to
the Phase 5





Goal Phase 5

The goal of the year is to complete the most crucial developments as defined by the participants of the latest Project Meeting in Rome, in 2/3 April 2012 are:

- ✓ implementation of probabilistic scores
- ✓ integration of the WMO-BUFR format for observations





Goal Phase 5

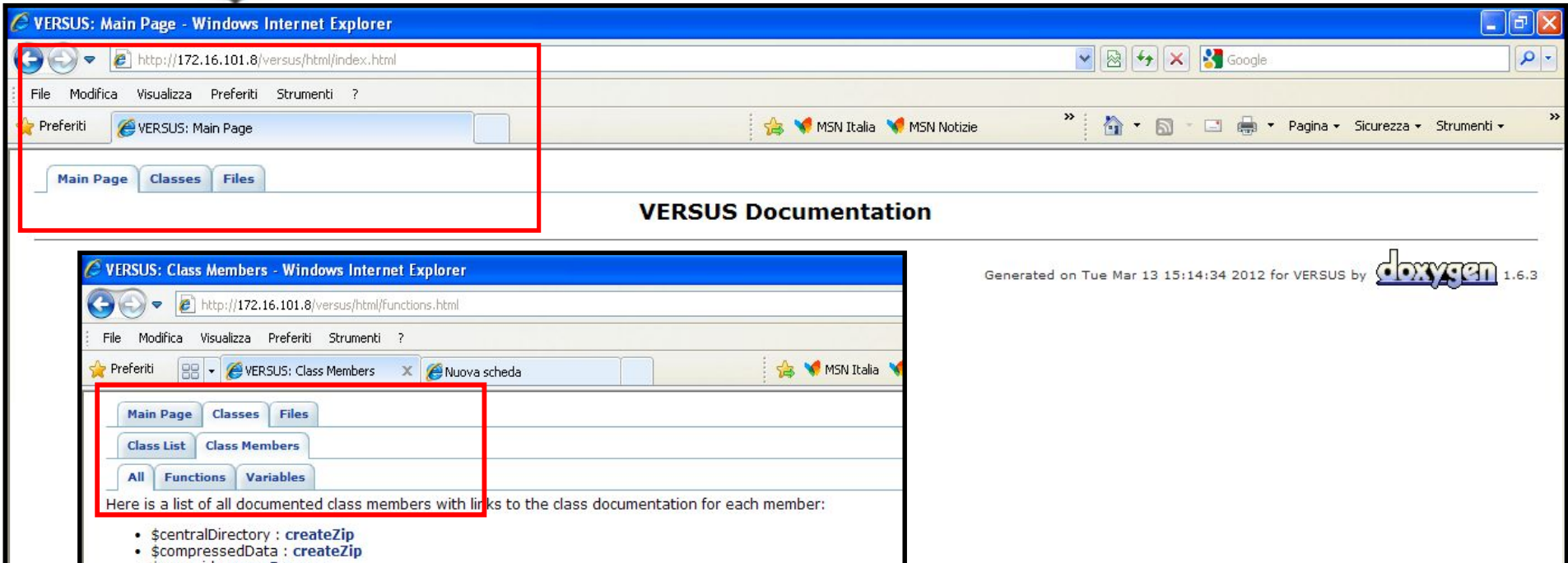
More over an other important goal is a user-friendly software and provide:

- ✓ Documentation update (COSMO standard)
- ✓ implementation of an automatic Documentation generator: such as DOXIGEN
- ✓ Software Components Upgrading (PHP, MYSQL, R, R packages)
- ✓ Help desk activity

These activities will allow any partner to have the instruments to further develop VERSUS by themselves.



Doxygen in VERSUS



VERSUS: Main Page - Windows Internet Explorer

http://172.16.101.8/versus/html/index.html

VERSUS: Main Page

Main Page Classes Files

VERSUS Documentation

Generated on Tue Mar 13 15:14:34 2012 for VERSUS by **doxygen** 1.6.3

VERSUS: Class Members - Windows Internet Explorer

http://172.16.101.8/versus/html/functions.html

VERSUS: Class Members

Main Page Classes Files

Class List Class Members

All Functions Variables

Here is a list of all documented class members with links to the class documentation for each member:

- \$centralDirectory : [createZip](#)
- \$compressedData : [createZip](#)
- \$conn_id : [scoreDaemon](#)
- \$endOfCentralDirectory : [createZip](#)
- \$host : [scoreDaemon](#)
- \$oldOffset : [createZip](#)
- \$password : [scoreDaemon](#)
- \$user : [scoreDaemon](#)
- __construct() : [scoreDaemon](#)
- addDirectory() : [createZip](#)
- addFile() : [createZip](#)
- execScore() : [scoreDaemon](#)
- execTimeSeries() : [scoreDaemon](#)
- execUpperScore() : [scoreDaemon](#)
- forceDownload() : [createZip](#)
- getPageData() : [Pager](#)
- getZippedfile() : [createZip](#)



Doxygen in VERSUS

The image displays two overlapping web browser windows from the VERSUS application. The left window, titled "VERSUS: File Index", shows a navigation menu with "Main Page", "Classes", and "Files" tabs, and a "File List" sub-tab. Below the menu is a list of files, including "AnalysisDelete.php", "AnalysisDownload.php", "AnalysisList.php", "AnalysisListMulti.php", "AnalysisRegistration.php", "AnalysisSave.php", "BatchExecution.php", "BatchExecutionCross.php", "check_user.php", "ChooseItemFromDB.php", "CommonFunction.php", "CommonGUIFunction.php", "CommonInclude.php", "ConditionalRegistration.php", "consortium.php", "contact.php", "ContinuousGeoGraphic.php", "COSIDeleteMulti.php", "COSIExecNumericMulti.php", "COSIForm.php", "COSIPeriodicalMulti.php", "COSIRegistration.php", "COSIReport.php", "COSIScoresMulti.php", "createGraph.php", "createZip.php", "CrossGraphicDownload.php", "CrossMulti.php", "CrossPeriodicalRegistration.php", and "DataAvailableMulti.php".

The right window, titled "VERSUS: Class Members", shows a similar navigation menu with "Main Page", "Classes", and "Files" tabs, and "File List" and "File Members" sub-tabs. Below the menu are tabs for "All", "Functions", and "Variables", and a set of buttons labeled with characters: "\$", "c", "f", "g", "i", "l", "p", "s". The main content area displays the text "Here is a list of all documented file members with links to the documentation:" followed by a list of variables and their associated files:

- `$_SERVER` : [AnalysisDelete.php](#)
- `$accetta` : [AnalysisSave.php](#)
- `$arr_totale` : [AnalysisListMulti.php](#)
- `$check` : [AnalysisList.php](#)
- `$cnd` : [AnalysisSave.php](#)
- `$colors` : [CommonFunction.php](#)
- `$con` : [AnalysisRegistration.php](#) , [AnalysisList.php](#)
- `$conditional` : [ChooseItemFromDB.php](#)
- `$content` : [AnalysisDelete.php](#) , [BatchExecution.php](#) , [BatchExecutionCross.php](#)
- `$criteria_type` : [AnalysisDelete.php](#) , [AnalysisRegistration.php](#) , [AnalysisSave.php](#)
- `$data1` : [AnalysisDelete.php](#)
- `$data2` : [AnalysisDelete.php](#)
- `$dbh` : [AnalysisDownload.php](#)
- `$diff` : [AnalysisDelete.php](#)
- `$end_time` : [AnalysisDelete.php](#)
- `$fcs` : [AnalysisDelete.php](#)
- `$fcsisset` : [AnalysisSave.php](#)



Doxygen in VERSUS

The developments are easy to understand.

AnaListDateMulti.php File Reference

This page shows the list of verification that had been configured as date interval analysis. More...

Variables

```
if($c_type==1) $query
                $ress = mysql_query($query) or print "[DB Select error :$query . NO: ".mysql_erro()." ]<br>"
                $num_righe = mysql_num_rows($ress )
```

Detailed Description

This page shows the list of verification that had been configured as date interval analysis.
This page let to choose available grib data related to the analysis verification.

Author:
Filodea Pastorelli

Date:
01/01/2011

Authors:
Filodea Pastorelli

Date:
01/01/2011

Variable Documentation

\$num_righe = mysql_num_rows(\$ress)

Gets the number of query rows

if (\$c_type==1) \$query

Initial value:

```
"SELECT distinct a.id_select_criteria, rag, id_registered_grib, ds_select_criteria, suspect_obs_flg,
start_date, end_date, cd_criteria_type, id_frequency FROM select_criteria a $where $listid $dt_start $dt_end
LIMIT $offset, $limit"
```

Building of query

```
$ress = mysql_query($query) or print "[DB Select error :$query . NO: ".mysql_erro()." ]<br>"
```

Submit the query

Generated on Tue Mar 13 15:14:34 2012 for VERSUS by **doxygen** 1.6.3





VERSUS PP - Task2

Task 2: Test Area and Test Procedure Creation

As the system became quite complex, a standard test procedure needs to be defined and carried out by the VERSUS group

Main Activities:

- Task 2.a: VERSUS installation on a new machine at the CNMCA Centre. This system will be available from internet (80.17.44.25/versus).
- Task 2.b: Loading of data and preparation of the test environment (ready in October)
- Task 2.c: Definition and documentation of the test procedure and the subdivision activities for the partners.





VERSUS PP - Task 2

Test Area and Test Procedure Creation

The screenshot shows the VERSUS web application interface. The header includes the COSMO logo, the VERSUS logo, and the Servizio Meteorologico dell'Aeronautica logo. The left sidebar contains navigation links: Home, Information, Consortium, Related links, Contact, Documents, User Manual, Technical Manual, and Glossary. The main content area is titled "What is VERSUS" and describes the system as a flexible and configurable tool for verifying weather forecasting models. It lists the following modules:

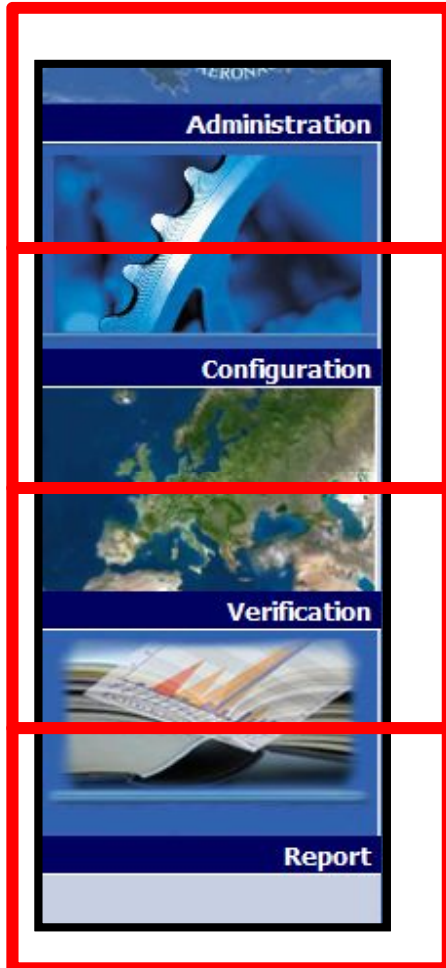
- An RDBMS (MySQL) for:
 - hosting of data to be verified, including observations (synop and temp data) and forecasts (in grib format)
 - configuration data for verification
 - managing verification results (various statistical scores, images, etc.)
- A Front-End (FE) Loader for loading data into the DB
- Scores FE for:
 - computation of various statistical scores using R
 - production of graphs using JpGraph
 - storage of the numeric and graphical results in the DB

The right sidebar contains a "Login" form with fields for "User id" and "Password", and a "Login" button.

*public machine
Provide by CNMCA
(80.17.44.25/versus)*



VERSUS PP - Task 2



The idea is:

1. Divide Versus in different Areas
2. Assign each area to the WG5 members
3. Release the new VERSUS Patch/Version
4. Define a period for the Test phase
5. Close the test phase and collect the document with a check list
6. Start with the bugs fixed
7. Release the VERSUS update to the COSMO Community





VERSUS PP - phase5

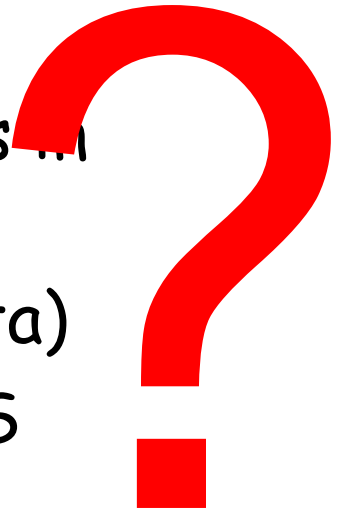
Task 3: Implementation of Probabilistic Scores (PL TEAM)

Task 4: Implementation of the WMO BUFR (PL TEAM)

Task 5: Final Implementation of Feedback Files in
VERSUS

Task 6: Use of gridded observations (radar data)
Use of experimental version in VERSUS

Task 7: New statistical techniques Feasibility





VERSUS PP - phase5

Task 7: New statistical techniques Feasibility

The goal is to choose the most desired and suitable methods, to analyze in detail the possibility to include new statistical techniques in VERSUS.

Main Activities

Task 7a: Feasibility document (TBD during the GM)

Perhaps it is better put this task in the WG5 task list and not now in the VERSUS PP





VERSUS PP - phase5

Versus operational for each COSMO members

In this COSMO YEAR

- Complete the Implementation of Probabilistic Scores
- Maximal automation of the verification and graphics production
- Implementation of generalised use of precipitation
- Update the system for the functionality of WMO-BUFR template
- Implementation of use of hourly observations and non-instantaneous variables (e.g wind gusts)





VERSUS PP - phase5

Desirable for the future:

- Use of gridded observations (radar data)
- Use of experimental version in VERSUS
- Implementation of Feedback Files in VERSUS
- Introduction of additional statistical techniques in VERSUS (Neighbourhood methods, SAL)
- Implementation of Grib2 in VERSUS
-





Thanks
for your
attention!