



PP VERSUS2 Phase6

Development for Next COSMO Year,
Crucial Points and Future Maintenance

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VERSUS 2 PROJECT PLAN

The goal is to complete the last developments, ensure the stability of the system in order to replace the existing verification systems in COSMO community.

The following task list is the result of the WG5 requirements collected during the last **VERSUS** User Seminar (VUS) in May 2013



Task list - Overview

- Task 0:** Help Desk, Refinements VERSUS code
- Task 1:** Refinement of functionalities
- Task 2:** Final Implementation of Feedback Files
- Task 3:** Introduction of additional statistical techniques
- Task 4:** Enhance flexibility of EPS verification
- Task 5:** Imp. of functionality to ingest/manage GRIB2
- Task 6:** Extension of the ASCII import capabilities

Modular tasks not dependent on each other.

Do not perform or delete a task doesn't have an impact with the others.



Crucial Points

Plan is ambitious and challenging
Unfortunately, unplanned events have occurred later
and have made difficult to carry out each task.

The main reasons are:

- The forced absence of the PL for 6 months (the Team will lose a resource)
- Unforeseen delay in the signing of the contract with the external consultant



Proposals

1. Definition of a **realistic assessment of priorities** of priorities as well as of necessary resources.

Not only from the WG but also from the STC

2. Reduce **the commitments** of the PL Team in some activities (Task 0 for example)

Your Collaboration

3. Additional **resources** have to be searched intensively for smaller developments in different way (COSMO funds, university students)

Your Collaboration

4. A **periodic report** (every 2/3 months) is proposed to track the developments.



Task 0: Help Desk, CODE Refinements

This task includes all activities required for the user to support and functional improvement of the system.

The most challenging are: Help Desk, Documentation update, New VERSUS releases, Bugs Fixing and Test Phases.

This year new tasks have been added :

- VERSUS *Course for Developers* in May 2/3 days
- Code adjustment for *Partitioning TABLES*



Task1: Refinement of functionalities

The goal is improve the functionalities already present in VERSUS

Main activities:

- Conditional Verification: condition in both fcs and obs Data
- Precipitation analysis from composite sources

It's crucial to define a standard code for the precipitation parameter (SCA- TAG)

- Confidence Interval integration



Task 2: Implementation of FF

The use of Feedback Files (FF) is important to improve upper air verification and Conditional Verification

In the 2010 a feasibility study was made. Now the great increase of VERSUS functionalities lead to the need to re-analyze the solution.

Main activities:

- Re-analysis and DB creation
- Implementation of Loader module for FF
- Creation of new Web GUI



Task 3: Additional stat. techniques

This task involves the adoption of some external package in order to perform Verification with neighborhood methods and spatial verification (upscaling methods)

Main activities:

- Use of Fieldextra or LIBSIM as an external tool for BOX, (regridding of fcs/obs, calculations of SuperObs and Fcs mean in boxes or alert areas)

SCA or TAG Decision

- Integration in VERSUS
- Integration Fuzzy Verification
- Integration SAL



Task 4: Enhance flexibility of EPS verification

Task defined with the WG7 collaboration

Implementation of a dynamical way to choose, update, modify and add further probabilistic indices and graphs (already available in R package)

Priorities? Someone has already started to use the system?
feedback on the results of the standard indexes?

Main activities:

DB Adjustment, Update Versus Code, Score Creation, Gui Adjustment



Task 4: EPS Pre-operative phase

Task defined with the WG7 collaboration

To ensure proper functionality of the system a pre-operating phase has been defined. After this period (4 months), a list of feedback will be drawn after the future developments will be defined.

The purpose of this task is to be sure that what has been developed is consistent with the needs of each meteorological services



Task 5: Ingest/ manage GRIB2

VERSUS needs to be adapted in order to accept GRIB2 as input for fcs. The system is already designed for GRIB2 as it uses Grib_API as library for decoding, but Tables containing FCS data have to be updated accordingly.

Main activities:

- Creation of new tables for GRIB2
- Connection with existing Tables GRIB1
- Gui Adjustment
- Loader Module implementation



Task 6: Extension of the ASCII import capabilities

The growing need for a flexible data import, suggested an extension of ASCII import capabilities of VERSUS.

The system is able to read SYNOP observations in ASCII format but the possibility to import both model and observational data would add a great deal of flexibility to the software.

Main activities:

- Feasibility study and documentation to use the ATAB file
- Implementation of final template for ingesting ASCII files in VERSUS



Gantt VERSUS Phase6 2013/14

| | 9/2013 | 10/2013 | 11/2013 | 12/2013 | 1/2014 | 2/2014 |
|---------------|---------|---------|---------|---------|--------|--------|
| Bugs fixing | PL TEAM | | | | | |
| Manual Update | HNMS | | | | | |
| Task 0.f | | PL TEAM | | | | |
| Task 1.a | | | PL TEAM | | | |
| Task 1.b | SAC | | | | | |
| Task 1.c | | | PL TEAM | | | |
| Task 3.a | | | TBD | | | |
| Task 3.b | | SAC | | | | |
| Task 3.c | | | TBD | | | |
| Task 4 | | | | PL TEAM | | |





Gantt VERSUS Phase6 -2014

| | 3/2014 | 4/2014 | 05/2014 | 6/2014 | 7/2014 | 8/2014 |
|-----------------|----------------|---------|---------|---------|---------|--------|
| SUB TASK | PL TEAM DWD | | | | | |
| Task 0.e | | PL TEAM | | | | |
| Task 2.a | | | PL TEAM | | | |
| Task 2.b | | | | PL TEAM | | |
| Task 2.c | | | | | PL TEAM | |
| Task 2.d | | | | | | DWD |

This Gantt does not consider the new developer TRAINING
Some delay could be possible



Task list Evaluation

Task 1: Refinement of functionalities

Task 1.c Next Year

Task 3: Introduction of additional statistical techniques

Task 3.d We need a great collaboration from NMS

Task 3.e Next Year

Task 4: Enhance flexibility of EPS verification

Task 5: Imp. of functionality to ingest/manage GRIB2

Next Year

Task 6: Extension of the ASCII import capabilities

Task 6.a MCH and WG5 ?? Definition of parameters need to be included in VERSUS and definition of the displacements

Task 6.b Next Year



Long term VERSUS maintenance

The long term maintenance will be assured by CNMCA-USAM.

VERSUS is the operational verification system of Italian Met Service and it is included in a contract for CNMCA maintenance software (and hardware).

The following activities will be assured:

- Help Desk
- Software updates (PHP, Phoenix libraries, R package)
- DB tuning and optimization
- Installation problems



Long term VERSUS development

Will be assured from July 2013 to the end of 2014

For the future (after 2014)

- VERSUS will be structured, year by year, as a Support activity in the framework of permanent PT for SUPPORT in order to keep the developments well monitored. SCA of VERSUS will be the responsible for the developments and their directions
- During the Annual WG5 workshop (in Spring), the new requirements (and priorities) could be discussed, finding resources and giving to the PL Team the specifications for the new developments
- The developments restricted to one/two could be implemented also financing the development with the COSMO license

