The Italian testing region for earthquake forecasting experiments within CSEP: *The Rules of the Game*
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This document summarizes the "*Rules of the Game"* of the CSEP forecasting experiment that will be run for the Italian testing region.

1. Each model submitted for earthquake forecasting in the Italian testing region will be evaluated independently from the modeler in the CSEP EU Testing Center at ETH Zurich (eu.cseptesting.org) for the predefined time of the experiment. Models cannot be withdrawn from the test without the agreement of the board of directors of the CSEP EU Testing Center.

2. The forecasts must be based on a predefined spatial grid with 0.1 deg spacing that can be downloaded from eu.cseptesting.org. Each forecast consists of a seismicity rate for each magnitude bin in each cell and the defined time window. Only earthquakes with depth less than 30 km are considered.

3. Masking of areas and magnitudes is allowed; a model has to provide forecast for the whole area and all magnitude bins; however, it can mask a subset of bins to limit the area and magnitudes for which the model is considered valid. This subset will be tested separately.

4. The following testing classes are defined for the Italian testing region:

   A. 5- and 10-year models: These models define a forecast rate for each magnitude bin in the range M5-9 (0.1 magnitude unit steps) for the period 1 August 2009 to 1 August 2014 and 1 August 2019. The forecasted rates at each bin must be received by the testing center before 1 August 2009.

   B. 3-months model. These models define a forecast rate for each magnitude bin in the range M4-9 (0.1 magnitude unit steps) for consecutive 3-month periods (starting at midnight UTC of 1 February 1 May, 1 August, and 1 November). Models must be implemented at the CSEP EU Testing Center as code that can independently and automatically compute forecast rates, based on predefined authoritative input data.

   C. 1-day forecasts. These models define a forecast rate for each magnitude bin in the range M4-9 (0.1 magnitude units steps) for consecutive 1-day periods starting at midnight UTC. Models must be implemented at the CSEP EU Testing Center as code that can independently and automatically compute the forecast rates, based on predefined authoritative input data.

5. The testing center will not distribute the codes supplied; however, in the interest of advancing the science of earthquake forecasting, open-source codes are highly preferable. In the event that the codes cannot be made open source, the testing center and modeler will work on a case-by-case basis on finding a solution that fits the needs of both sides. In any case, the board of directors will decide which models to include on the basis of scientific publications or reports. For the long-term testing class (5/10 years forecast and M5-9), numerical tables in ForecastML format (template can be downloaded at eu.cseptesting.org) containing the forecasts will be accepted.

6. The official bulletin for future earthquakes that will be used for evaluation of the forecasts is the INGV bulletin; the reliability of the bulletin in terms of homogeneity and spatio-temporal completeness has been checked since 16 April 2005 (see www.completenessweb.org). The INGV ML magnitude scale will be considered the reference scale for model development and testing. No declustering will be applied to the observations.

7. All forecast tables have to be submitted to the testing center before the start of the experiment. Forecast codes need to be installed and function-checked in collaboration with testing center staff, which requires appropriate scheduling in advance.

8. Models will be evaluated against the authoritative observed data supplied by INGV using the official suite of tests used in CSEP experiments. All forecast results are stored; therefore, additional tests can be integrated at a later stage if the need arises without compromising the integrity of the prospective testing experiment. Tests are performed with a delay of 30 days relative to real-time, in order for the authoritative data to be manually revised and published. The catalog data used for testing is archived at CSEP EU Testing Center and also available on the centers web site.

9. Results of the experiment will be released according to the rules defined by a document that will be released before the end of 2009.