

**Exercise promoted by the ChEESE Project (<https://cheese-coe.eu/>) to show the potentiality of Urgent Computing for Rapid Post Event Assessment:**

**the 2020 Mw 7 Samos earthquake**

**With the participation of the NEAMTWS Tsunami Service Providers NOA, KOERI, CAT-INGV; the ARISTOTLE Tsunami Hazard Group; National and European Civil Protection representatives; EPOS representatives**

9:00	<p>Introduction</p> <ol style="list-style-type: none"><li>1) Welcome and Exercise agenda (INGV)</li><li>2) The ChEESE project (BSC)</li><li>3) The ChEESE PD8, Probabilistic Tsunami Forecasting (PTF) for early warning and rapid post event assessment (INGV)</li><li>4) HPC resources (CINECA)</li></ol>
9:30	<p>Simulation of the 2020 Samos Event:</p> <ol style="list-style-type: none"><li>1) Earthquake detected (9:33)</li><li>2) Alarm sounds - First Earthquake parameters available (9:33-9:35) - all procedures start:<ol style="list-style-type: none"><li>a) Tsunami Alert produced with Decision Matrix (DM) by NOA, KOERI, and CAT-INGV</li><li>b) PTF in Early Warning mode (based on pre-calculated scenarios)</li><li>c) PTF in Urgent Computing Mode: submission of massive simulations to the Marconi100 supercomputer @CINECA</li></ol></li></ol>
9:45	<p>Tsunami Warning Messages by NEAMTWS TSPs (CAT-INGV, NOA, KOERI), based on DM, short presentations by</p> <ol style="list-style-type: none"><li>1) NOA (upgraded operations: updated DM, enhanced mapping product, use of Mw, national messages)</li><li>2) KOERI (enhanced products, potential use of numerical simulations)</li><li>3) INGV (DM and preliminary enhanced products)</li></ol>
10:15	<p>Tsunami description (NOA, KOERI/GTU): Marigrams, Ongoing Messages, eye-witness and footages during the tsunami</p>
10:35	<p>PTF Results - comparison with DM and data (INGV)</p> <ol style="list-style-type: none"><li>1) Early warning mode</li><li>2) Urgent Computing mode</li><li>3) Role of the thresholds / conservatism</li><li>4) Comparison of the different forecasts (DM, single simulations, PTF ensemble in early warning and in urgent computing mode) with observations, including run-ups</li></ol>
11:05	<p>Discussion (Chair NOA)</p>
11:45	<p>Added Value by Urgent Computing to ARISTOTLE Emergency Reporting (ARISTOTLE Tsunami Hazard Group deputy chair)</p>
12:10	<p>Other applications and Future developments:</p> <ol style="list-style-type: none"><li>1) Towards HPC-based Early Warning in Spanish National Warning Centre - ChEESE PD2 (UMA)</li><li>2) Earthquake-tsunami coupled simulation - ChEESE PD4 (LMU/TUM)</li><li>3) ChEESE Workflow management system (HLRS)</li><li>4) ChEESE PD7 (NGI)</li></ol>
13:20	<p>Closing remarks - End of the exercise</p>