The TURNkey TB4 Achaia Array: Bridging School and Citizen Seismology through Earthquake Alerting

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An extended strong motion array comprised mainly of low cost sensors has been deployed in the Achaia region: the Patras city and the Aigion, Kalavrita towns, Greece. It combines: 4 standard accelerometric stations operated by the National Observatory of Athens, Institute of Geodynamics (NOA), 15 P-Alert MEMS acceleration devices, already deployed and operated in public sector buildings, schools and private dwellings (the Patras P-Alert Array) and 40 Raspberry Shake 4D sensors, which are deployed through the newly established Test Bed 4 region (TB4) for the H2020 financed TURNkey project. Principal aim, in an operational approach, to estimate rapidly the intensity of a felt event in a highly populated urban environment and inform local Civil Protection Agencies and through them the final responders and the general public. Moreover, the deployment of these low cost sensors, especially in schools of the Achaia region, aims to involve the pupils/students, in primary and secondary education, towards exploring School Seismology exercises, in a region where strong felt earthquakes are very frequent. Simple exercises in class, using the recorded data after a felt event have been completed such as: locating the event, estimating the magnitude, show the distribution of max PGA values in the region etc. Taking advantage of the school – local community link, the resilience increase has been already demonstrated in the local communities through happenings, popularized seminars and local press postings. A connection with the Municipalities and the Communal public sector allows the expansion of the citizen involvement (Citizen Seismology) through the use of dedicated smartphone app (i.e. LastQuake@EMSC). Citizens are informed and also pass their felt experience. This allows improved estimation and distribution of the shaking in a second phase, useful for Civil Protection Agencies. The increase of the resilience and public awareness are under monitoring with the collaboration of local media. All data will be also used as input to a TURNkey under development central platform, serving as an EEW system, mainly focusing to schools in an application for the TB4 project region in Greece.