

Publishable executive summary

Decision making on self-inspection of EE building made of prefab components relies on the already proven precise information that is collected using SoundBrush probes, high resolution photo cameras, thermographic cameras and also 3D laser surveying (geometry, colour and reflectivity). These techniques are applied depending on the goal, scale, resources and the required accuracy for construction, refurbishment and maintenance operations. 3D laser scanning can acquire millimetre-level of detail from concrete elements to entire envelopes, which allows rapid, automatic and periodical estimation. Image-based techniques applied to key attributes can be straightforward mapped on 3D laser scanning data, leading to useful point clouds capable of being processed and managed into BIM.

It is clear that points and parametrical features need spatial positioning to make appropriate interventions. Suitable coordinate systems are required so that positions can be defined within it. The present deliverable completes one of the pillars of WP2 (Systems for self-inspection), providing the equipment and the techniques to meet so that not only the already demonstrated combination of 2D and 3D information is achieved, but going one step further, combining these information's with state of the art 3D spatial positioning systems for indoor/outdoor alignment & referencing (using geometrical, fiducial, GPS, IPS data) or just to be included into GIS environments. The connection to AR/VR applications is also described.

By means of real examples from the project demonstrators it is expected that the resulting procedures will be operationally used as long as the appropriate software & hardware tools are available, best practices become known and general knowledge of these results becomes more wide spread.

