Contribution ID: **78** Type: **not specified**

The LUMINAR project

Monday 13 June 2016 11:30 (30 minutes)

In 2012 a consortium of parties interested in Large Volume Metrology was formed to submit a Potential Research Topic into the European Metrology Research Programme. The topic was subsequently selected for the second stage of the call process and a project consortium consisting of 5 National Metrology Institutes, 3 Universities and 3 unfunded industrial partners was formed to bid into the call. The bid, presented at a competitive selection process in November 2012 was successful and the three year research project started on 1 June 2013.

The research consortium was charged with addressing the prioritised objectives:

1. To develop innovative measuring systems which bridge the gap between photogrammetry and laser trackers, working over volumes of 10 m × 10 m × 5 m, to a target accuracy of 50 µm.
2. To develop novel absolute distance meters which are intrinsically traceable to the SI and which operate over tens of metres range.
3. To develop a method to provide on-line compensation for refractive index effects in ambient air in industrial environments, targeting 10E-7 accuracy over a volume of approximately 10 m × 10 m × 5 m.
4. To model, understand and predict the behaviour of multi-component assemblies (up to 5 m dimension) in non-ideal environments (5 ℃ temperature deviation).

Furthermore, these techniques had to be demonstrated at the end of the project in typical end user environments. As reported at the end of project workshop (NPL UK, 18-19 May 2016) all of the partners have achieved success in their research and several on-site measurement campaigns have been concluded.

The presentation will summarise the LUMINAR project, its aims, participants, research, and outputs (knowledge, instruments, techniques, IP)

Summary

The LUMINAR project (Large Volume Unified Metrology for Industry, Novel Applications and Research) is a collaborative research project in Large Volume Metrology involving 5 National Metrology Institutes, 3 universities and 3 unfunded industrial partners.

Author: Dr LEWIS, Andrew (National Physical Laboratory)

Presenter: Dr LEWIS, Andrew (National Physical Laboratory)

Session Classification: Metrology and alignment challenges