

## Bristol, 16th June 2015 - Q6 meeting at Bloodhound HQ

Being a case-study driven collaborative research and innovation project supported by Innovate UK, the partners of the LIGHT consortium gathered to discuss progress in designing and manufacturing their three demonstrators, aiming at weight reduction whilst meeting all mechanical and thermal requirements.

The hinge for the Bloodhound airbrake evolved in the last quarter in a direction that was not foreseen at the start of the project. Where the initial belief was to use internal lattices for achieving the objectives, alternative geometries seemed to result in even better properties. Investigations are under way to determine if a further optimization based upon the current findings is possible before 'printing' our final demonstrator.

MPL's crushable structure of the earth re-entry capsule has been manufactured in a scaled version using a lattice structure that is meeting all-but-one requirements. Ideas for also meeting the last requirements have been discussed and will be used to reach a final design of our demonstrator. Using the manufactured segments and investigations into vacuum brazing will result, after WIRE-EDMing them from the platform in a scaled prototype that will inspire possible further work to come to a full scale build when possibilities arise, as with the present state of technology and costs this is not yet an economic possibility.

HiETA's thrust nozzle got a big boost during the last quarter. As the designed configuration would not fit the preferred manufacturing system. HiETA forced themselves to rethink the design and came up with a significantly improved design in terms of its size (so it could fit the preferred manufacturing system) whilst also improving on mechanical properties and as a result reducing its weight from 1.8kg to 1.1 kg!

The meeting was closed by host Mark Chapman of partner Bloodhound who gave an update on the Bloodhound SSC with the unique opportunity to be informed 'on site' on the car's development, which is an amazing example of British engineering.

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For more information visit the website [www.light-project.co.uk](http://www.light-project.co.uk) or send an email to [info@light-project.co.uk](mailto:info@light-project.co.uk).

### Acknowledgements

As the UK's innovation agency, one of the main roles of the Technology Strategy Board is to achieve business and economic growth for the UK. One way the organisation supports this is through funding innovative Collaborative Research and Development (CR&D) projects. Collaborative research and development (R&D) encourages businesses and researchers to work together on innovative projects in strategically important areas of science, engineering and technology – from which successful new products, processes and services can emerge, contributing to business and economic growth. Find out more about the CR&D programme here: <https://www.innovateuk.org/-/collaborative-r-d>

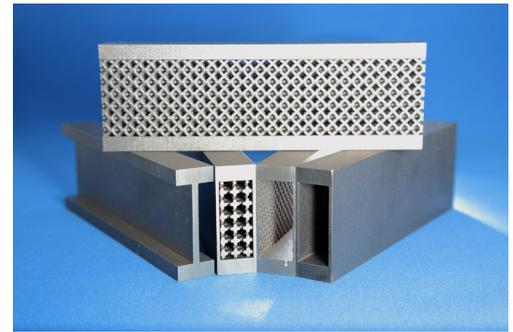


Figure 1: Five geometries



Figure 2: Build platform with pieces



Figure 3: LIGHT partners with Bloodhound SSC