Guidance notes

What are the functional definitions?

The overall aim of this work was to produce an accepted set of definitions that describe the basic levels of how building system controls work. These definitions would then serve as 'building blocks', where both specifications of control classes (e.g. within Building Regulations), and specific control products will always be made up of a combination of these. That way the two can be matched up to ascertain whether products comply with those specifications.

As an example, a thermo-mechanical room thermostat would be made up of functional definitions BOC1 plus BTM1, while a standard TRV would be made up of RHC2 plus BTM1.

While the intention is that the definitions will eventually cover all building system controls, this first document is restricted to controls for hydronic heating systems serving radiators and/or underfloor heating. The definitions would be applicable for both central and emitter controls.

How can the functional definitions be used?

These definitions should provide greater clarity when assessing or comparing control products and it is envisaged that this will provide three distinct benefits:

1. Compliance. There are a number of definitions used for classes of controls (e.g. in SAP, Building Regulations and energy labelling regulations) and it is not necessarily easy to distinguish between different definitions for, say, weather compensation. Mapping the functional definitions to these policy definitions should make it easier for manufacturers to self-declare compliant products and therefore provide clarity for suppliers, installers, scheme managers and market surveillance authorities.
2. Research. Testing and comparing different controls is limited unless it is clear which functions, or combination of functions, are actually delivering observed energy savings. Most of the functions defined in this paper are expected to have the potential to influence the energy use of the heating system in comparison to other functions. Therefore, correctly interpreting research will reply on knowing what functions are within a control being tested, and what functions are in any controls they are being compared against.
3. Categorisation. Developments in control technology make it increasingly important to categorise new technologies so that there is clarity over what they deliver. To achieve this the functional definitions include an indication of those functions that can be labelled as 'smart', from which wider smart control categorisation could follow based on what outcomes the smart control is required to deliver.

Background

The functional definitions were compiled by BEAMA Heating Controls, the association for UK manufacturers. The initial draft was discussed at a workshop in December 2017, jointly hosted by BEAMA and HHIC with wider industry representatives invited. This was followed by a consultation process to ensure that the definitions covered all available technologies and that the definitions themselves were clear and precise. The definitions will be reviewed on a regular basis.