CEIR & FECS comments regarding standardisation of Building Information Modeling (BIM)

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CEIR, the European association for the taps and valves industry representing sanitary, building and industrial valve manufacturers

and

FECS, the European Sanitaryware Producers Federation, representing and promoting the interests of the ceramic sanitaryware industry

- recognise the growing need for sustainable buildings in both new build and refurbishment projects
- recognise that industry needs cohesive tools to aid manufacturers.

CEIR and FECS believe that manufacturers must play a key role in the ongoing development of an acceptable international harmonised Building Information Modeling (BIM) system for the bathroom industry. Therefore, CEIR and FECS agreed to work together to achieve this goal.

Standardisation of BIM: CEIR and FECS contribution to CEN / TC 442

CEIR and FECS believe that the Industry needs to be aware of the templates that are under development in the various countries. In addition, when necessary, the Industry must voice its opinion to CEN/TC 442 for BIM standardisation. This is due to the nature and scope of CEN/TC 442:

- it covers standardisation in the field of structured semantic life cycle information for the built environment that may impact manufacturers and

- it is developing a structured set of standards, specifications and reports which specify methodologies to define, describe, exchange, monitor, record and securely handle asset data, semantics and processes with links to geospatial and other external data that may impact manufacturers.

As a CEN/TC 442 liaison committee, CEIR together with FECS provided the WG4 with a joint recommendation on BIM Product Data Templates for:

- Valves
- Taps
- Sanitaryware products

This recommendation aimed to provide CEN/TC 442 with the Industry's direct input for consideration.

Integration of ISO 16757 as EN standards

As a CEN/TC 442 liaison committee via the WG4 sessions, CEIR, and indirectly FECS, were informed about the integration of ISO 16757 into EN standards covering BIM. However, this raises strong concern, notably in terms of feasibility, liability and compatibility.

The reason for this concern is:

ISO 16757 part 1 §3.4 requires that the behaviour of the product is defined by an "arithmetic function" according to environmental variables (BSS properties) instead of "normally done by tables, formulas, or diagrams where the reader can relate some situation specific parameters of the system with the actual behaviour of the product".

Detailed comments on the integration of ISO 16757 into EN standards:

- *Feasibility of functions from a physical / mechanical point of view*

CEIR and FECS doubt that all the properties of a valve (sanitary products or industrial building valves) can be modelled by an arithmetic function. Indeed, certain properties of these products are determined experimentally under environmental reference conditions dictated by the Product Standards:

- Constant upstream pressure
- Constant upstream flow
- Defined temperature
- Tested with water
- Under defined aperture.

It seems unlikely to be economically feasible to perform the tests for each possible set of conditions. It is also unlikely to be possible to correlate the results in mathematical form by varying these parameters (some related to each other: pressure and flow rate, for example) as well as varying physical properties (several industrial valves are used for different fluids, changing completely the calculation method...).

Furthermore, we frequently need to use different curves representing different parameters and conditions to select a product.

- *Responsibilities for BSS data and functions*

In addition, CEIR and FECS question the accuracy of the environmental variables: if the result of the function is wrong, is this due to the inaccuracy of the function or environmental variables? What is the product manufacturer's liability? How is the question of function validity managed?

- *Overlap between VDI specifications and harmonised product standards*

Finally, the ISO 16757 series was presented as based on a set of specifications (VDI3805) defining the properties of the products. These specifications are redundant with certain parts of the Product Standards. Therefore, they should not be used as a substitute for the work carried out by Product TCs, which has been the subject of a European consensus.

Another issue is the user behaviour and operational variation at the source: e.g. there is an influence from “how much open is the angle stop valve” (see Annex I for a case example).

CEIR and FECS recommendations

For the reasons stated above, CEIR and FECS believe that ISO 16757 part 1, as it currently stands, cannot be integrated into EN standards covering BIM. Indeed, CEIR and FECS recommend that the required product properties remain those contained in the CEIR and FECS BIM Product Data Templates.

These documents have been handed over to CEN/TC 442 WG4 as a recommendation for valves, taps and sanitaryware products. In the light of the state of the art, these templates are based on the Product Standards used by the professionals responsible for designing the installation of the product.

About CEIR

The European Association for the Taps and Valves Industry (CEIR) was formed in 1959 as the European federation of national manufacturer associations. CEIR gathers together a large number of European manufacturers in the field of valves and fittings. CEIR supports the principles of a free economy and private enterprise in Europe as well as on a global basis. CEIR represents the common economic, technical and scientific interests of the European valve industries, in particular towards international authorities and economic and commercial circles.

About FECS

Established in Geneva in 1954, the European Sanitaryware Producers Federation (FECS) promotes the interests of the ceramic sanitaryware industry in Europe. Today it represents seven national trade associations and companies from the European Union, Turkey and Switzerland. FECS directly employs approximately 22,000 people and has an annual turnover of € 4.5 billion.

ANNEX I: CASE EXAMPLE

ISO 16757
2.6
building services system
BSS
technical system that provides building services in a building
[SOURCE: ISO 16484-2]

2.7
BSS property
technical property that describes an aspect of the current state of a BSS
Note 1 to entry: A BSS property cannot get a value in a catalogue because the states of the building services system are not known and will vary according to the specific system and its various system states.

EXAMPLE:
In the example given in 2.10, ‘media volume flow’ and ‘media density’ are BSS properties.
2.10
dynamic property
technical property, that reflects the product's behavior under the operating conditions of the building services system in which the product is installed

EXAMPLE:
The dynamic property 'pressure loss of a pipe elbow' is dependent of the ‘media volume flow’ and the ‘media density’. In a catalogue, the manufacturer of a pipe elbow has to provide a means to allow the determination of the actual 'pressure loss' for various values of ‘media volume flow’ and ‘media density’
Note 1 to entry: A dynamic property does not get a value from a product catalogue because the value of a dynamic property is dependent on the state of the building services system into which the product will be integrated. Therefore, the value may vary according to the state. The catalogue normally contains some means which allow the product user to determine the value of that property in a given state of the building services system.