**January 2013 bSa Challenge:**

by E. William East, PhD, PE, F.ASCE - Engineer Research and Development Center, U.S. Army, Corps of Engineers

The [January 2013 buildingSMART alliance Challenge](http://buildingsmartalliance.org/index.php/newsevents/proceedings/buildingsmartchallenge13/) was the first buildingSMART Challenge event that expanded the set of contracted information exchanges beyond the Construction-Operations Building information exchange ([COBie](http://www.wbdg.org/resources/cobie.php)). This event introduced standards for the exchange of building programming information, at the early stages of project planning, and standards for the exchange of building systems, from design through the production of construction shop drawings. Ssoftware systems supporting [COBie](http://www.wbdg.org/resources/cobie.php) version 2.4, the Building Programming information exchange ([BPie](http://www.buildingsmartalliance.org/projects/activeprojects/31)), and the Heating, Ventilating and Air Conditioning information exchange ([HVACie](http://www.buildingsmartalliance.org/projects/activeprojects/174)) formats were demonstrated.

The [detailed requirements](http://buildingsmartalliance.org/index.php/newsevents/proceedings/buildingsmartchallenge13/) for this Challenge were published by the buildingSMART alliance in February 2012 and discussed among the participants during monthly software developer meetings between February and October 2012. Meeting notes were provided to all potential Challenge participants. An example of one of the extensive sets of meeting from one of the meetings can be seen [here](http://projects.buildingsmartalliance.org/files/?artifact_id=4787). A new tool for the automated checking of COBie files, the [COBie ToolKit](https://dl.dropbox.com/u/92303697/COBieChallengeTools.zip) was developed and used for this challenge. The rules used by the TookKit were documented in the [COBie Responsibility Matrix](http://projects.buildingsmartalliance.org/files/?artifact_id=4093) and developed with direct feedback by the software developers and programmers. Another important contribution of these monthly discussions was the development of, and agreement to, rules governing the [order of precedence when merging multiple model files](http://projects.buildingsmartalliance.org/files/?artifact_id=4705) at the Construction Documents stage of design. Final submissions were due 15 December 2012. This page provides information about the performance of one specific commercial software product.

**product information**

Files tested in the bSa Challenge are produced from software that can be commercially purchased on, or before, to the date of the Challenge. The table below provides information about the product tested and links to user guides and support hotlines.

|  |  |
| --- | --- |
| **Company Name** | Nosyko AS |
| **Company Logo** | [dRofus\_logo](http://projects.buildingsmartalliance.org/files/?artifact_id=5258)  |
| **Product Name** | dRofus |
| **Product Version** | 1.5 BETA |
| **User Guide** | [dRofus\_COBieUserGuide](http://projects.buildingsmartalliance.org/files/?artifact_id=5120) |
| **User Support** | drofus@nosyko.no |
| **Files Produced:** | Project Planning/Programming | BPie |
| **Files Consumed:** | Project Planning/Programming | BPie |

**Demo information**

Software companies were required to provide a set of files to demonstrate their products compliance with the requirements of the bSa Challenge. The table below provides a link to these files. As appropriate, notes are provided below the table.

|  |  |  |
| --- | --- | --- |
| **Native BIM File** | Not provided |  |
| **COBie File** | [dRofus Certification file](http://projects.buildingsmartalliance.org/files/?artifact_id=5007) | 503 KB (.ifc) |

BPie Software Results

Since BPie is a new model view definition and application of COBie, there is not a set of BPie quality control rules available. Thus, evaluation based on the COBieToolkit QC Reports is not appropriate. However, the file was run using the Design QC report and inspected with regards to Project Planning/Programming requirements.

Other than a missing Phone Number in the Contact worksheet there were no issues with the submitted file. When running the file through the DesignQC report identifies errors: “at least one Component per Type,” missing Facility units of measure, and missing Floor category. Since the model is only provided to identify SpaceTypes, these errors are not applicable; there are no SpaceType Components and the definition of SpaceTypes is done independent of Facility and Floor.

**CONCLUSION**

This company successfully completed the BPie demonstration by producing a BPie file of the Medical Clinic model. Based on inspection of the results, a user utilizing dRofus software will not have to spend time cleaning/fixing a BPie file to include required information.

There are several reasons why buildingSMART alliance efforts to create the United States Building Information Model Standards have been successful. First, owners have begun to understand the need to receive building information that decreases both the first and recurring costs. There is now a standard (the COBie standard) and commentary (the COBie Guide) that defines the required information for building information deliverables.

Second, use of open standards decreases the cost of software developers to meet owners’ requirements. Finally, innovation in this domain is now beginning in earnest since a common information framework frees software companies from chasing owner-specific and proprietary software-to-software information exchange protocols.

The publication of NBIMS-US v 2.0 began the transformation of planning, design, construction, and operations from a document-centric approach that began in the Italian Renaissance to a process where documents are provided with matching data. The overall result of the January 2013 bSa Challenge demonstrates that this transformation has begun. The specific results provided on this page give specific evidence that this process is underway.