Creating BEDES-Compliant Applications: Partnership Opportunity

Why BEDES?

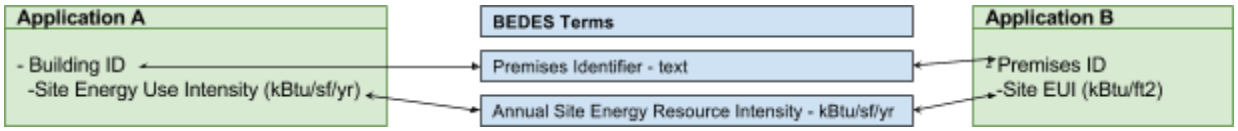
BEDES is essentially a dictionary of standard terms and definitions that can be used as the basis for consistent data transformations between application datasets that may or may not be structured.

For example, the BEDES composite term "*Annual Site Energy Resource Intensity*" can be used to unambiguously map various application implementation fields that use different field names to refer to the same value. Early adopters that have been mapped to BEDES include field names such as "*Site Energy Use Intensity (kBtu/sf/yr)*" and "*Site EUI (kBtu/ft²)*". These field names both correctly map to "*Annual Site Energy Resource Intensity*" although that is not clearly explicit for "*Site EUI (kBtu/ft²)*". A fully elaborated transformation would not only make appropriate mappings explicit, but could be used to automate data exchange between various application tools.

Site Energy Use Intensity (kBtu/sf/yr) <-> Annual Site Energy Resource Intensity-kBtu/sf/yr <-> Site EUI (kBtu/ft²)

This mapped transformation would properly transform *Site Energy Use Intensity (kBtu/sf/yr)* to *Site EUI (kBtu/ft²)* (or the reverse) and make it clear that both application fields are "Annual" even though this information is only implicit in the left-most field's unit of measure, and is entirely missing (although intended) in the right-most term.

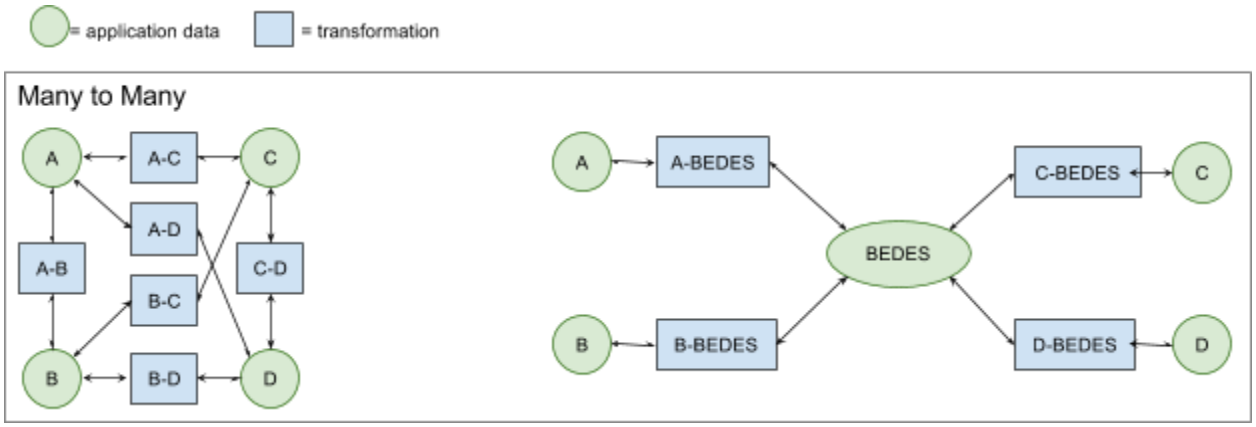
BEDES transformations could use a flat list of BEDES *term--unit* pairs to implement the transformation, independent from where the application fields reside in the application data structures.



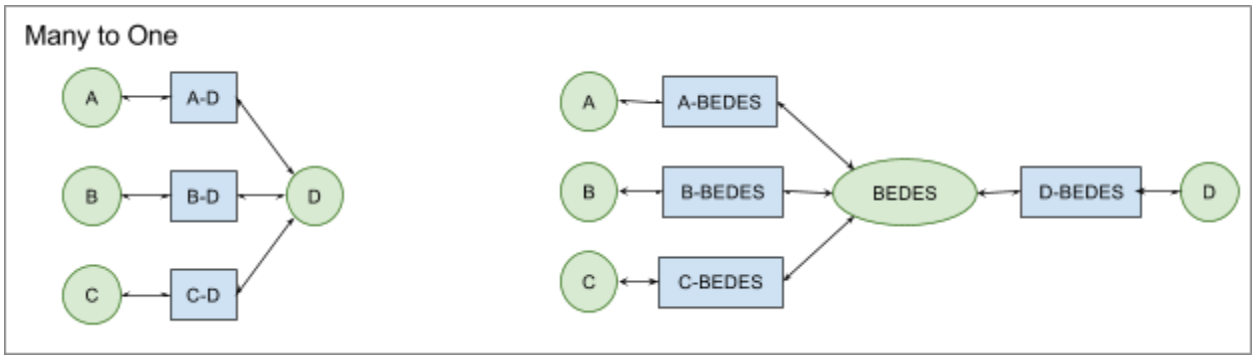
How Can BEDES Help You Today?

In the long term, there is clearly an advantage in using BEDES to standardize terms and definitions across the building energy data ecosystem. In the near term, the advantages for early adopters using BEDES for transformations between datasets used by different applications varies depending on the number of applications needing to exchange data.

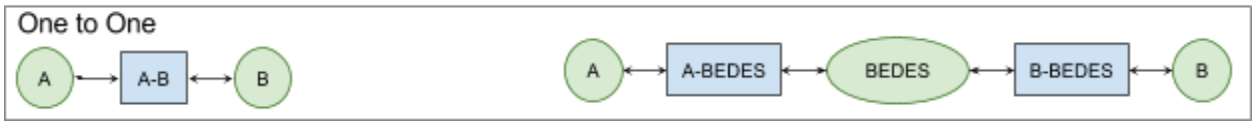
If your use case calls for many-to-many data exchanges, BEDES in the middle creates clear advantages to all applications, requiring only a single transformation to BEDES from each application, rather than having to maintain separate transformations between each pair of applications.



If your use case calls for many-to-one (or one-to-many) data exchanges, you may still benefit from BEDES. This situation requires each individual application to create a separate transformation to BEDES rather than just pairwise transformations between each of the “many” client applications and the “one” prime application. However using BEDES provides the advantage of only having to maintain a single transformation to BEDES rather than maintaining each pairwise transformation as individual application datasets are modified. Also, if the prime application requires future client applications to have BEDES transformations they can easily be integrated.



If your use calls for only one-to-one data exchanges, using BEDES in the middle does not add value and is actually more work. Rather than a single transformation between applications A and B, two transformations are required as shown in the illustration below comparing left and right diagrams. However, the advantage of making units of measure explicit as described above, remains a benefit. Additionally, you would be helping to promote the cause of data standardization through BEDES.



The Partnership Opportunity

What DOE Provides:

- Strategic planning for data standardization
- Mapping assistance (up to actually doing the mappings)
- Help developing transformations for BEDES terms
    - Allows users to create BEDES-compliant files for their applications
- Training to maintain transformation

What Participants Commit to Provide:

- Documentation of their application terms and definitions
- Working with the BEDES team to create mappings and transformations
- Publicizing and promoting their BEDES collaboration
- Use of mapping and transformation for real business purpose
- Mapping and transformation maintenance going forward

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