Recommendations for NIEM Compliance

PESC Technical Advisory Board

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As the result of the CAM analysis of core-main NIEM compliance, several steps are recommended to bring ACT Schemas into better alignment with NIEM:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Task | Schema  doc | Schema  structure | Instance  processing | App impact  (0-4) | Difficulty  (0-4) | Effort  (elapsed days) | Notes |
| 1. Perform the CAM Analysis on all PESC and FSA sector libraries to obtain violations of NIEM rules. |  |  |  | 0 | 1 | 3 | Depends on naming representation being completed |
| 1. Declare all elements as global and reference these elements in complex type definitions instead of defining them within the complex type. |  | X |  | 0 | 3 | 7 | Can be automated by CAM. No impact on instance docs |
| 1. Add annotation documentation to every element and type that contains the definition of that element or type. | X |  |  | 0 | 2 | 7 | Transfer from workbook to CAM for schema creation |
| 1. Add annotation documentation to every enumeration code value with the definition of that code value. (Note: This may be as simple in some cases as expanding the camel case where self-evident.) | X |  |  | 0 | 2 | 7 | Transfer from workbook to CAM for schema creation |
| 1. Remove xsd:group from PESC schemas | X | X | ? | 2 | 3 | 1 | Choice may be lost among group elements. Automate with CAM |
| 1. Evaluate all elements that are nillable and determine if this has special meaning that requires nillable= “true”. Remove attribute where not needed |  | X | X | 1 | 2 | 30 | Assign to ERUG |
| 1. Identify the representation terms to be used by PESC in naming simple content elements. These would include, but would not be restricted to, NIEM and XML R&R representational terms. |  |  |  | 0 | 4 | 30 | CCB |
| 1. Evaluate all elements that are flagged by CAM to not have a representation term in the name using the approved list. Change those that 1)should use a representation term already defined, or 2) the representation term is wrong for the type (e.g., an enumeration code with representation term List) |  | X | X | 1 | 1 | 21 | ERUG  CCB |
| 1. Evaluate all simple elements that have a character length defined and determine if this is needed. This could create problems with interoperability. Remove this restriction where not needed |  | X | ? | 2 | 1 | 14 | Existing applications may get longer content. |
| 1. Evaluate all the CAM identified simple elements that have no restrictions or types at all. Change where the restrictions needed. |  | X | X | 1 | 1 | 7 | Existing elements may not validate (increased constraint) |
| 1. Evaluate all the CAM identified simple elements with numeric name representation but not typed as a number. Change the representation term unless it is a proper noun. |  | X | X | 1 | 1 | 7 | If not using a number then these elements would not validate |
| 1. To insure backward compatibility of instance documents, elements that need to be renamed can be added to the schema and the replaced elements redefined as a part of the substitution group with the new element as the group head. The older elements would be deprecated and removed over time when no longer I use. |  | X |  |  |  |  |  |
| 1. Evaluate NIEM core objects to determine if we should use any of these instead of PESC core or sector objects | X | X | X | 4 |  |  | Not required. CCB |
| 1. Determine strategy if PESC should use abstract elements and substitution groups for defining complex elements with the same meaning but this slightly different content (e.g., Address): <http://www.xfront.com/ElementHierarchy.html> |  | X |  |  |  |  | Not required |