

EML v6 PUBLIC REVIEW 1 – Changes Log

The following is a list of the changes made as a result of the first Public Review of EML v6. Apart from the first item which a change to the Specification document, all other changes made are to the XML schemas and each of the schemas contains a change history at its beginning noting the changes made.

Summary

Subject	Comment	Change made
Data Model for EML	At the recent meeting on requirements for a common set of election data formats, several of us commented that it would be very useful to have a UML data model for elections data, which would presumably correspond to the EML schemas. Creating such a data model might help uncover any possible inconsistencies or other anomalies in the current version of EML that could be rectified in version 6.0	Data model produced and now part of v6.0 documentation, see Specification file Part 3.3.
VotingValueType description and restriction	<p>VotingValueType is currently restricted to "positiveInteger". In Range voting, the voter assigns a rating to a candidate, indicating how satisfied that voter is with that candidate. The range is usually from zero to some maximum value. Zero is often a legitimate rating (and is not the same as not assigning any rating). In order to permit a zero value, the restriction should be changed to "nonNegativeInteger".</p> <p>If Technical Committee experts feel that it is not acceptable to change VotingValueType to permit a zero value, then another alternative is to use the "Value" attribute (of type VotingValueType) to hold the ranking in ranked preference elections and to use a new attribute, perhaps named "Rating", of a type permitting "nonNegativeInteger" to hold the rating for a Range voting election or the number of points for a Cumulative election with points.</p> <p>If you decide to change VotingValueType to permit a zero value, then I suggest replacing the current description, "The weight or preference applied to a selection" with the following expanded description:</p> <p>"VotingValueType: For Preferential voting systems (such as Instant-Runoff, Single Transferable Vote, Condorcet Method, or Board Count): an integer ranking with a value from one up to the number of candidates.</p>	VotingValueType changed from positiveInteger to nonNegativeInteger with a revised description.

	<p>For Range voting systems: an integer rating from zero up to some limit defined as part of the ballot definition. For Cumulative voting with points: an integer number of points from zero up to some limit defined as part of the ballot definition."</p> <p>If you decide to leave VotingValueType as a "positiveInteger" and introduce a new attribute that can be a "nonNegativeInteger", then it will be necessary to modify the schemas so that the Candidate element can have the new Rating attribute whenever it can have the Value attribute. In this case I suggest the following descriptions for the VotingValueType and the VotingRatingType:</p> <p>"VotingValueType: For Preferential voting systems (such as Instant-Runoff, Single Transferable Vote, Condorcet Method, or Board Count), an integer ranking with a value from one up to the number of candidates."</p> <p>"VotingRatingType: For Range voting systems, an integer rating from zero up to some limit defined as part of the ballot definition. For Cumulative voting with points, an integer number of points from zero up to some limit defined as part of the ballot definition."</p>	
Geopolitical Data	<p>Issue: Only two levels...Districts containing different types of divisions. We don't have a way to represent district categories, or multi-level hierarchies of district relations. Recommendation: In 150-include (of 150-geodistrict), allow districts to also be a child element by making them a part of the emlcore divisionTypeDefinition enum so that we can use EML District as a district category.</p>	District Enumeration value added.
Geopolitical Data	<p>Issue: Cannot link contests to districts. Can this be linked through one of the existing elements (PollingPlace, Area, ReportingUnit). If so, how do we handle splits (if related through polling place, for example). Recommendation: Add a district element to 110-elecitonevent contest element.</p>	District element added.
Cast Vote	<p>Issue: In 440-460-include, attribute "Spoilt" looks like what we call an OutstackCondition, which is an enum and marks the ballot for later adjudication. Recommendation: Make "Spoilt" an enum with the common types (undefined, undervote, overvote, writein, provisional, challenge, blank, broken straight party, party crossover primary) and ##other. We also propose that this be renamed from "Spoilt" to something less absolute, reflecting the fact that it can be changed in adjudication post-process.</p>	SelectionStatus and BallotStatus indicators added to 440-460. Also added Adjudicate and Adjudicated to allow human review status tracking.

Election Definition	<p>Issue: Do not see any provision for control contests. A single ballot can have contests which are influenced by the control contest selection as well as contests which are not influenced by this selection. For example, a straight party or selective primary control contests. These control contests can automatically select candidates of the chosen party for votes in a straight party control contest, or “enable” only the partisan contests matching the party chosen in the selective primary control contest.</p> <p>Recommendation: In 110-electionevent, add a ControlContest element under Contest with a ContestIdentifier attribute pointing to the controlling contest.</p>	Changes made as per recommendation.
Election Definition	<p>Issue: Certain contests have rules applied against them in the system which are dependent on which type of contest they are. An example would be a controlled contest (see previous issue)</p> <p>Recommendation: Add a ContestType enumeration containing common contest types (proposal, standard, recall, straight party (or ticket), selective primary). Add this as an element to 110-electionevent Contest.</p>	Recommended change made.
Channel Node	I don't see a "Channel" node defined anywhere in 450. I see "VotingChannel" in VoteConfirmation - AuditInformation but it's an enum unless I'm reading it wrong.	Channel ID added.
Tamper Resistance	Is the Seal Structure in the core EML Structure meant for tamper resistance? It seems to be the only standard structure that would have datetime info for every record. My alternative would be to use one of the "other" structures to embed the voter sign-in time.	Optional and repeatable voting event construct added to Voter record in 310-330 to allow tracking of event participation.
Standard Names	Another feature needed for auditing contests that span multiple jurisdictions is a standard way to identify standard names for contests and candidates, since again these names can often vary in subtle ways between jurisdictions, as documented extensively at the NIST workshop. These standard names may be different from the way each jurisdiction wants the names to appear for local reporting purposes, so I'm picturing two elements - the local name and the standard name, for both contests and candidates.	LocalName added.
EML 310 / EML core	U.S.-centric data are absent from EML V6 (core, and section 310), for example, attributes of a registered voter that describe the voter in terms of UOCAVA status (e.g., domestic/resident, civilian/abroad/temporarily, military/posted/domestic, military/posted/abroad, and other items for abroad temporarily or permanently, or spouse or dependent posted with military service person).	ResidencyDetails added to voter registration along with Military and ResidencyAbroad addresses.
EML 230 /	Need support for one of the key U.S. centric aspects of our effort: identification of a 3rd-party	VoterRegistrar details added to

	registrar to state VR system.	voter registration.
Affiliation	Affiliation is defined using one use of AffiliationStructure, 3 anonymous types derived from that type, and xs:token. Consider changing names to distinguish different types.	New optional element AffiliationDetails added containing repeatable AffiliationAssociation of AffiliationIdentifier and AffiliationDescription with optional start/end dates.
Date	Date is defined once using ComplexDateRangeStructure and once using xs:date. Consider changing names to distinguish different types.	Name of Date in 110-electionevent changed to DateRange
Description	Description is defined eleven times using type MessagesStructure and once using xs:token. Change the one xs:token instance of Description to use xs:string.	Suggested change made.
Format	Format is defined as an attribute three times in emlcore-v6-0.xsd, twice with type xs:NMTOKEN and once with a restricted type based on xs:NMTOKEN. Consider harmonizing types.	Changed Format with restriction to be called ContentFormat as these really are semantically different things.
Gender	Gender is defined twice, once with type GenderType and once with an inline type equivalent to GenderType. Replace the inline type definition with a reference to GenderType.	Suggested change made.
IdNumber	IdNumber is defined eleven times, ten time with type xs:NMTOKEN and once with type xs:token. Make the xs:NMTOKEN type in all IdNumbers.	Suggested change made.
MaxWriteIn	MaxWriteIn is defined twice with type xs:nonNegativeInteger (zero allowed) and once with type xs:positiveInteger (zero prohibited). Consider harmonizing types.	xs:nonNegativeInteger now used throughout.
Nominate	Nominate is defined twice using two slightly different complex types. Consider consolidating types.	Suggested change made.
Position	Position is defined twice using type xs:token and once using type PositionStructure, which is based on xs:token. Consider changing names, creating a named type.	Changes made to make all use type.

Proposer	Proposer is defined twice with identical anonymous complex types and once with type ProposerStructure. Consider consolidating the two anonymous complex types into a named type.	Suggested change made.
Qualifier	Qualifier is defined once with type xs:token and once with an anonymous complex type. Consider harmonizing types.	Core item changed to Qualification and annotation updated.
ReportingUnitVotes	ReportingUnitVotes is defined twice with closely related anonymous complex types. Consolidate the two anonymous complex types.	Suggested change made.
ReportType	The attribute reportType is defined once and the attribute ReportType is defined twice. reportType has no type specified; ReportType has type xs:token. Change the name and type of reportType.	Suggested change made.
TotalVotes	TotalVotes is defined twice with closely related anonymous complex types. Consolidate the two anonymous complex types.	Suggested change made.
Type	Type appears 14 times, as both an element and an attribute, using four different types: xs:anyURI, xs:string, xs:NMTOKEN, and xs:token. Consider reducing the number of types used to define Type.	The anyURI type has been renamed
Votes	Votes is defined once with type xs:positiveInteger and once with an anonymous complex type. Consider changing the name to distinguish the two cases.	Suggested change made.

Detailed Schema Changes

A detailed list of the schema changes is available at <http://lists.oasis-open.org/archives/election-services/201006/msg00006.html>
The following table summarizes these changes.

Old item	New \ Change	Type details	Schema
AffiliationStructure\Description	AffiliationStructure\AffiliationDescription	From token to string	EML core
Binary\Format	Binary\ContentFormat	Same with attributes ContestLocalName="%Token%" AuthorityIdentifier="%Token%" language="%en-US%"	EML core
ContestIdentifierStructure	Added child element LocalName	language="%en-US%"	EML core
ElectoralAddress	Added child element ResidencyAbroadAddress	CIQ Address type Aligned with Position including attributes	EML core
Proxy\Position	Proxy\Position	Includes complexType for Proposer	EML core
After MessagesStructure	Added NominationType	Proposer	EML core
Voter	Added ResidencyAbroadAddress	Address	EML core
Voter	Voter/NominationType	Proposer	EML core
Voter/Qualifier	Voter/Qualification	Token complexType	EML core
Voter/Affiliation	Voter/AffiliationDetails	AffiliationAssociation	EML core
ProcessingUnits/Gateway/@Role	Removed blank enumeration	string	EML core
VTokenLogging/@Role	Removed blank enumeration	string	EML core
SealLoggingSystem/@Role	Removed blank enumeration	string	EML core
ProcessingUnits/Other/@Role	Removed blank enumeration	string	EML core
PollingDivisionStructure/Source/@Role	Removed blank enumeration	string	EML core
PollingDivisionStructure/Name/@DivisionType	Added enumeration for district	string	EML core
Votes	VotesCount	positive integer	EML 520
ReportingUnitVotes	Added @ ReportType	string	EML 510
Voter	Voter/Registrar	complexType AgentStructure	EML 330
VoterRegistration	VoterRegistration/ResidencyAbroadAddress	complexType Address	EML 310
VoterRegistration	VoterRegistration/Registrar	complexType AgentStructure	EML 310
PollingPlaceGeoLocation/@IdNumber	PollingPlaceGeoLocation/@IdNumber	NMTOKEN	EML 510
Election/Date	Election/DateRange	complexType DateRangeType	EML110

Election	Election/District	complexType locally defined	EML 110
Election	Election/ControlContest	complexType locally defined	EML 110
Election	Election/ContestType	complexType locally defined	EML 110
VoteConfirmation	VoteConfirmation/ChannelID	ChannelIDType	EML 450