Q&A for . . .

April 8, 2015

New FDOT Applications Related to FDOT Digital Delivery

Q: Where can I find the recorded video and Questions & Answers?
A: You can go to the Engineering/CADD Systems Office (ECSO) Posted Webinar site in the FDOT Delivery section under FDOT Digital Delivery:
http://www.dot.state.fl.us/ecso/downloads/GoToMeetingTraining/PostedWebinars.shtm#loadSection

Q: Where can I find the Schema LandXML-1.2.xsd?
A: http://www.landxml.org/schema/LandXML-1.2/documentation/LandXML-1.2Doc.html

Q: Are you concerned about larger file sizes with XML as compared with other formats?
A: Not really. Since most civil applications deal with very few of the LandXML object types: typically alignments, profiles, surface data, and perhaps pipe networks the variety of data types supported are quite sparse compared to what the schema supports. The volume (file size) of the data can be an issue, but file size seems to be more of an issue with the design packages themselves, and not the FDOT viewer or FDOT signer. As for questions of storage, even very large LandXML files will ZIP significantly smaller that both their original text size (.XML) and the drawing apps (.DGN or .DWG) that created them. One can also divide-and-conquer by dealing with data in manageable segments.

Q Are you looking at IFC? There is a project underway with buildingSMART P6 IFC Alignment Candidate Standard.
A: There was a lot of conversation at this year's Transportation Research Board in Washington about IFC and its potential to become THE standard for the horizontal civil industry some point in the future. Several multinational heavy build contractors have also standardized on IFC internally for their data. IFC is immature and incomplete for Civil/Highway application currently, but attending were several IFC schema architects from both US and Europe and a strong request was made to implement the best features of LandXML into IFC. Of Course IFC is very rich for describing the vertical builds.

Q: Since we are required to change our passwords regularly, how does that affect signing a document or changing a signature after you have had to change your password?
A: With a digital signature, your password represents a "private key" possessed only by you to access your certificate in order to apply your Digital Signature. This is unrelated to a computer resource access policy used to restrict your access to a computer or computer network. You should never share your certificate password with anyone, or they could impersonate you and sign something without your knowledge. They are different in that respect, but unless the program and policy of the Certificate Authority that issues your digital certificate requires periodic password changes then it is not required. FDOT uses ACES based certificates issued by IdenTrust, which are sufficiently secure for the purposes they are being used for and the Federal Government (who promulgates ACES policy) does not require password change during the lifecycle of a given issuance of a certificate.

Q: Are signed XML currently required?
A: Currently Signed XML files are not required, however the delivery of XML data is required. The CADD Manual in Chapters 4.17.1 and 5.12 discuss this, and that XML data is provided to our contractors when we get it. Some states have begun replacing content in their plans with model data, or made model data higher in precedence in cases of information conflict (between the model and plans). This trend will continue. Florida is watching closely how this plays out, and may select particular projects to try this on sometime in the future. But we have to crawl before walk, and there will need to be some decisions made on what content will remain in plans, and what content will be in Signed models when that day comes. We do not foresee plans going away entirely, ever, but certain content may no longer be necessary (like cross sections, for instance) when models become more widely used.

Q: How well does XML handle projected profiles, (i.e. sidewalk) where the stationing doesn't match the baseline and how would one export that information accurately?
A: LandXML defines a schema for describing route geometry. A projected profile is still, in the end, just a profile. LandXML does not record the provenance of the data, that is how the particular object came into existence (was it projected?, was it just keyed in the way it is?, etc.). It is the responsibility of the design package to properly record the geometry of the profile in question. The LandXML 1.2 Schema documentation can be accessed here: http://www.landxml.org/schema/LandXML-1.2/documentation/LandXML-1.2Doc.html

And if you dig into the definition of the "Profile" object you see how a profile can be defined. An enumeration of the Profile can be its own start station, or the design application could provide the start station of the profile different to that of the alignment itself. But the responsibility to write the data correctly is upon the design application itself. Things get trickier when in your example the profile does not represent the alignment, but some offset object that isn't precisely parallel to alignment. It's the design application that interprets the XML data to handle the profiles.