

# The Future of Specifications

Questions and Answers – February 19, 2013

The following are questions submitted by attendees during the webinar, and the responses of the presenters:

Q: The future of specs seems to focus on integration in BIM. How is this really going to work? [Jay Ford]

A: Mark Kalin: Drawings and specifications need to be coordinated regardless of how they are produced – but you need to start from whatever knowledge level you have and move forward. Word processing software allows for integration of images, even SketchUp allows assigning names and attributes to objects, advanced CADD and BIM software allows for take-offs. Your effort should be guided by what comes next – meaning who will look at the data next. If it's the firm's designer then graphics may be paramount. If it's a subcontractor then a basis-of-design product name may be critical. If it's a facility manager, then the size of the filter may be the driver. Always look downstream!

Q: The door example just given on one of the early powerpoint slides does not seem to be correct - just look at the door schedule. [Jack Romigh]

A: Rob Dean: The standard flush swinging door objects provided by Autodesk in Revit do not indicate whether they are made of wood or metal, so it's not possible to connect them to the correct specification sections. That data can be added and, of course, it typically is added by users to produce schedules.

Q: I was wondering, what was the software you showed earlier to manage all the cost related subjects? [Mauricio Mireles]

A: Rob Dean: I included a screen shot from our BSD CostLink/AE product.

Q: How can these work for those who still hand draw? [Eva Growney]

A: Mark Kalin: Understanding the relationship between the quantitative forms in drawings and the qualitative attributes in specs is important, regardless of whether the project is drawn by hand, in CADD, or in BIM software.

Q: Where can I find other spec writers using these BIM integrated programs? specifically, eSpecs for Revit.[Margaret Lipscomb]

A: Mark Kalin: Contact the software vendor, and ask to contact their user's group.

A: Michael Brennan: For e-SPECS, send a note to our team at [sales@e-SPECS.com](mailto:sales@e-SPECS.com) to find out who is using our applications.

Q: Question for Rob Dean: Where would information that is needed during the operation of the building such as "as built", warranties, equipment service and maintenance information, etc. be stored for use by the facility manager without changing the legal contract documents? [Raymond J Kelly]

A: Rob Dean: "As-built" documents typically are produced by making adjustments to the original contract documents. That is true whether the documents are produced manually or through the use of electronic tools.

Q: Is the thought that these GUIDs would be "registered" by some organization? Such that brick type xxx would be registered by its manufacturer and receive a GUID specifically for that product? Sort of like an ISBN number? [Thomas Bank]

A: Rob Dean: Ideally, there would be a non-profit organization such as CSI that would produce and maintain a master database of GUIDs, just as they produce and maintain the standard known as MasterFormat.

Q: Is E-spec and LinkMan available to use with any BIM system or is it just available for Revit? [Greg Burke, AIA]

A: Michael Brennan: Currently supported BIM and CAD applications include Revit (Arch, MEP and Structure), Navisworks, AutoCAD, and ArchiCAD. Document masters supported by e-SPECS include MasterSpec, Canadian Masters, US Dept of Veterans Affairs, Building Product Manufacturers libraries, as well as custom office masters. An integration to SpecsIntact and the UFGS documents will be available in Q2 2013.

A: Rob Dean: Currently, LinkMan-E connects BSD SpecLink only to Revit versions 2009 to 2013 (and shortly to version 2014). It is our hope and expectation that we will be able to extend that capability to other software, but in the meantime we have had to concentrate our efforts based on market share.

Q: Mr Dean seems to be advocating moving backward to distinct separate databases that need his product to integrate. What happened to the goal of a single integrated database. [John Brunt]

A: Rob Dean: Databases can easily be linked, forming a single database. That can be done within one software product or across several products. We have chosen a path we believe will be most effective in the near term.

Q: Revit DOES distinguish door materials.[Ralph Kurtz]

A: Rob Dean: In some cases, such as glass doors, it does. And it certainly is possible to assign material properties to the door objects. However, the point I was trying to make is simply this: the standard flush wood door objects provided as part of the standard Door Family do not indicate whether the door is made of metal or wood, so it isn't possible for us to automatically connect these "standard" objects to the correct specification section.

Q: How does bidding, especially government mandated competitive bidding work into the BIM scenario? [W. Scott Anderton]

A: Mark Kalin: Automation and electronic files actually improve competitive bidding, making quantity takeoffs easier and finding the right spec info more easily. There will likely come a time when manufacturer's will look at BIM models, the same way they look at hardcopy and CADD files in plan rooms today.

Q: I would hope that evolving taxonomies will be platform-neutral. It seems as if e-SPECS and BSD LinkMan require Windows-based systems. There are a lot of us who try to avoid Windows and are Mac-based. We come across this situation time and time again with AIA and it's frustrating. [Scott Newland]

A: Mark Kalin: I agree (we use Macs for specs in our office). The AIA TAP and CSI BIM groups promote a unified taxonomy, as does the buildingSMART alliance. There are several data dictionary projects underway at NIBS; contact Roger Grant at the National Institute of Building Sciences in Washington.

A: Rob Dean: As we move into cloud-based systems, we are becoming more and more platform neutral. In the meantime, many of our customers use our products on Apple products by using some of the excellent Windows emulation programs.

A:Michael Brennan: The model applications are for the most part only available in Windows versions so that is why we have focused only on Windows versions of our applications to date.

Q: If we are talking about the "future", why we still expect to specifications as paragraphs of text? I understand that these paragraphs are automatically generated from database. However it should presented differently as tabulated data with options & sub-options.[Samir Abdelmawla]

A: Mark Kalin: Text is just one form of output and will likely remain viable for the near future. Spreadsheets and databases may do a better job and allow relationships, but most architects and owners work in Word files.

A: Rob Dean: I agree with Mark. Our specifications are stored as records in a database, but the software can produce output in the form of PDF files, HTML files, RTF files, plain text (.txt) files or Word files. For the time being, Word output seems to be the most useful.

A: Michael Brennan: I agree that the future of specs should be about better management of the data, not better management of documents. Although e-SPECS provides its specification output as text documents (Word/Pdf) we also extract the data from the documents so that it can be passed on to other applications.

Q: Do we really want various users to be getting limited specification data? Doesn't this greatly increase the likelihood that important information will not be transmitted to parties that need it? Maybe I'm not envisioning what you mean, but I do not have any comfort level with distribution of partial specification data to various parties.[Stephen Hilt]

A: Mark Kalin: Limited data is most useful when only one piece of information is required. For example, how many doors, or what insulating glass is specified. A little bit like a google search when you look for a keyword but it comes up in many contexts.

A: Michael Brennan: We do not necessarily want to limit the amount of data that is distributed but rather we want to do a better job of providing information to project team members in the form they need it, when they need it and where they need it, and from the model context where available. If I want to look at information about the slab-on-grade, as I gave in my example, let me have access to just that information. If I want the entire cast-in-place section, it is also available to review as well.

Q: The drafters are typically not the people that make the decisions about materials and products. Won't either the drafting process slow down while decisions are made, or the accuracy of the specifications be jeopardized by incomplete information in the model? [Steven Reardon]

A: Mark Kalin: I agree that drafters (Reviteers as some call themselves) are not trained to make the decisions, nor do the designers or specifiers want them to. The designer and specifier will need to be able to reach into the model easily, or markup outputs for re-input. BIM will be used to constrain the options in the model, or present only the options the owner wants. For example, the door between rooms in a hotel – the owner cares a lot about the STC rating and may even have a national buying agreement.

A: Rob Dean: This is exactly the reason we designed BSD LinkMan-E to provide a dashboard view of the BIM and the corresponding specifications, so a project manager can easily compare the data and collapse it to find discrepancies.

Q: How much memory does this take up from the model? Will this information slow the model down? [Carolinn Kuebler]

A: Rob Dean: In the BSD solution, the additional data is external to the Revit model (contained in BSD SpecLink and in BSD LinkMan-E), so there is no additional burden on the model.

A: Michael Brennan: The e-SPECS specification data resides outside the models in a SQL database and relies on parameters in the model to reference the model elements. Since the number of parameters required to integrate specifications within the system is relatively quite small the increase in model size is negligible.

Q: What BIM applications can be used with the two products highlighted? [Anthony Chinn]

A: Mark Kalin: Autodesk Revit only to the best of my understanding.

A: Michael Brennan: e-SPECS integrates with a number of BIM/CAD applications and document masters. See above.

Q: Until a short time ago, computers were 32-Bit. Today they are 64-Bit. We once thought a megabyte DB was 'large' and cumbersome. Now we have terabyte drives, solid state drives, multi-core processing. If this continues, what will we have in a few more years? Why would we not want to integrate spec data and graphic data in one multi-gigabyte 'model'? [Michael MacVittie]

A: Mark Kalin: I agree, as long as the computers are fast enough, which certainly seems likely.

A: Rob Dean: As I mentioned above, databases consist of tables that can easily be connected, whether they are within one software application or several different applications. The Building Information Model can be concentrated in a single application with many different capabilities such as cost estimating computation and scheduling capabilities, or it can comprise a connected data set that is distributed across multiple platforms with specialized capabilities. For now, the latter approach seems more viable. Ten years from now, that assessment might change.

A: Michael Brennan: The limitation from our experience with distributed users of e-SPECS is not the processors or the drive capacity of the machines but rather the still cumbersome movement of the large models around the net. It is better to keep the specification data separate from the models (but fully integrated so the user does not really see the difference) so the spec data can be accessed remotely by other users and applications that may not require all the geometry and other data of the principal models.

Q: Great presentation! Question - I need to work directly with the keynotes and sets to add French terms on a project. Also, I'd like to have OmniClass and UniFormat in an inhouse master keynote list. How can I work with this data directly and get it to work in BSD or eSPECS, can I use a basic database and import? [Deborah Macpherson]

A: Mark Kalin: Continue to have a conversation with Greg Ceton at CSI and Roger Grant at NIBS.

A: Rob Dean: Our LinkMan-E keynotes function will allow you to assign unique keynotes to any or all objects in your Revit model.

A: Michael Brennan: Keynotes within e-SPECS are managed at both the master and project level, and correlated to the currently modeled materials. Any additional keynotes can be either added directly from the section text or imported from a standard file. It is quite common for a firm to have, in addition to the standard e-SPECS keynotes, a firm accepted annotations file which is imported into each project.

Q: How do you deal with product substitutions, which seem to always be submitted by contractors and subcontractors? [Raymond J Kelly]

A: Mark Kalin: BIM does not change the way we deal with product substitutions. If there is to be a BIM-model-of-record, the info would need to be updated by the firm being paid to do the update – architect, contractor, subcontractor.

Q: Is there any future of consolidating all numerical data for products for BIM, CSI, LEED, Etc.? [Mark Allison]

A: Mark Kalin: I believe data will be consolidated, but if the software is so fast and clever, perhaps we can just use English; or Spanish, or Chinese and have the software do the translation

Q: Can the panel comment on the role of IFC and the openBIM project as a means for exchange of specification information... will it work as an 'open' standard..? Can it be the 'container' for the specification information? [Adam James]

A: Rob Dean: Interoperability is the goal, and in order to accomplish that, someone will have to establish a standard that uniquely identifies products, assemblies, spaces, etc. Right now, CSI's OmniClass seems to have the greatest potential to evolve into an "open" standard that could be adopted under IFC and the various NIBS initiatives.

A: Michael Brennan: We have conducted some test integration with IFC but do not find it complete enough at this stage. The SPie initiative seems to offer some hope for a more complete and detailed approach for the future. We would much rather interface to an open standard but until there is one, we are using the model applications proprietary interfaces to accomplish our integration.

Q: From your lecture it seems that the system of spec writing we are trained for "Fast Track" projects will not work.

[Prabhansu Ghoshal]

A: Mark Kalin: We have worked on many fast-track projects drawn in BIM. Early packages can be treated as standalone models, or integrated as additional packages are bid.

A: Rob Dean: I agree with Mark.

A: Michael Brennan: Our services group have also worked on a number of fast track projects with e-SPECS integrated to the models. See the following case study as an example:

<http://www.e-specs.com/Marketing/Devenney%20Group%20e-SPECS%20Success%20Story.pdf>

Q: My question is: is only Revit can help in BIM? [Osama Jalal]

A: Mark Kalin: Bentley Architecture, Graphisoft ArchiCAD, Nemetschek Allplan Architecture, Gehry Technologies, IntelliCAD and others are all viable options.

Q: Appears very focused on proprietary manufacturers products. Fed procurement has to list salient characteristics, not products. How will this work for Fed procurement, and population of data during/after construction? [Denise Ryerkerk]

A: Mark Kalin: The Feds are pushing this forward the hardest! Federal procurement will be enhanced by this process. The whole SPIe effort and NIBS initiatives can allow for multiple or proprietary basis-of-design product selection.

Q: Do you see this eventually being integrated with business process modeling as a way to consider and assess how enterprise goals and logistics influence design and specification decisions? [joe manganelli]

A: Mark Kalin: Yes, definitely. For example, a shoe store in a mall wants to make a certain profit, and the average profit per sale is known, so the number of fitting stations and size of the storeroom is calculated to meet that goal.

Q: In light of current news of hostile network attacks, do you see this internet based info system being viable for sensitive clients like the DoD or State Dept? [Mark Dunn]

A: Mark Kalin: I agree; security issues will always be important but can likely be managed to a tolerable level of risk. Depends on the project type.

A: Michael Brennan: Yes, data security is a challenge and will only become more so as we migrate more of our products and services to the cloud. But there are many more industries ahead of us in this regard and we can draw on their experience as we move forward.

Q: Legal elements of sharing BIM info was mentioned, but could be better addressed.[Jack Hillbrand]

A: Mark Kalin: Thanks for the comment. At this point the BIM legal issues are the same as the CADD legal issues except more users are involved. There are many legal precedents in place.

Q: What about tying in code information? [Stephen Brown]

A: Mark Kalin: There is code checking software already available – able to find an exterior wall with too little insulation or a dead-end corridor that is too long.

Q: What's being done to create a national standard for keynoting? [Thomas Mrozenski]

A: Mark Kalin: I am not aware of any current national standard for keynoting. If Revit continues to be the most popular BIM software, their keynote list will become the default standard.

A: Rob Dean: Unfortunately, Revit does not currently offer a standard keynote list; Every Revit user has to generate its own list. Of course, Mark is right that it could quickly become a standard if Autodesk ever decides to create one.

A: Michael Brennan: I wonder why we will need keynotes in the future if you can just reference the specifications and other information directly from the model context. Keynotes are a good way to integrate paper drawings and paper documents (or disconnected models and digital documents) but we now have a better way to do this. Clearly the industry is not going to dispense with this methodology anytime soon so in the meantime we are providing better tools for managing the keynotes from the specification projects context.

Q: What are your thoughts on the 'Big BIM' concept? (presentations seem to suggest advocacy of this approach, but no one addressed it specifically). [Joe Manganello]

A: Rob Dean: Absolutely. The big promise of BIM is the ability to achieve better coordination between all disciplines.

A: Michael Brennan: We need to be moving towards better management of the data and information in the specifications so that it can be better provided to other applications and disciplines to support the Big BIM concept.

Q: If relying on manufacturers and other third parties to generate part of the data of the BIM system, who is then responsible for it being correct? It is still going to be the Architect, but instead of relieving the work burden on the Architect, it is greatly expanding it. The fear in the architectural industry is that the Architect is taking on vastly greater liability with each level of integration of BIM. How do new software innovations address these concerns? [Stephen Hilt]

A: Mark Kalin: The architect will always be on the hotseat because of his professional seal, but many will join in. I have to hope that when a contractor, subcontractor or manufacturer can have meaningful contact with the model, that it will be beneficial to all.

A: Rob Dean: The architect already has liability for the decisions made by his consultants. The hope and expectation is that improved coordination made possible by effective use of BIM will produce fewer conflicts and reduce the architect's exposure.

A: Michael Brennan: I see the integration of models and specifications as helping to provide the designers a better way to reconcile the information contained in the construction documents and reduce discrepancies, while also providing the builders more convenient access to the information as well. It is not just a "push-the-button" and the specs are developed. These systems are tools to help develop and reconcile the integration.

Q: When will specifications software companies coordinate the terminology used in their software with the National BIM Standard requirements that reference compliance with the National CAD Standard to meet minimum BIM? [Charles Green]

A: Mark Kalin: Roger Grant at the National Institute of Building Sciences in Washington is working on this. Suggest you contact him (and help).

Q: Most architects or designers who work in BIM are not familiar with Omniclass, Unifomat, etc. to the extent that is necessary to produce accurate specifications. I like the SPie model very much. Is there a way of getting this incorporated as standard in today's BIM software? [Rowan Georges]

A: Mark Kalin: SPie is likely to be integrated with the federal procurement process, with the designer needing to select certain attributes by the end of schematic design, more at design development, more at construction documents. See the NIBS website, as integration and support by trade associations and product manufactures is key to the success of SPie.

A: Michael Brennan: We should be evolving towards better management of the data contained in the spec docs now and I see the direction of SPie as aiding the process, not just for BPM's and procurement but at the head-in management

of the spec-BIM integration preparation process, as well as being a framework for passing information down to other apps and processes.

Q: Most architects are actually in solo practice or have less than 5 employees. How can the small practice currently using (2-D CAD, 3-D modeling and Word format Specs all made into PDFs and communicated through Dropbox) get themselves headed in the right direction with regard to BIM / Specs on a very tight budget? [Michael Hardiman]

A: Mark Kalin: Many small firms use BIM, even for houses and small interiors projects. At least the plans and elevations match in BIM!

Q: How are Bulletins and Addenda translated/incorporated? [Stephen Brown]

A: Mark Kalin: The same procedures are used for bulletins and addenda. If a portion of a model is updated, that portion can show the old and new version. Most bulletins and addenda are issued in hardcopy, but that could change.

A: Michael Brennan: In e-SPECS we have a feature to allow the users to attach associated files (in any format) to the specification projects so that the information can be accessed and reviewed from the model applications, specifically for the model element under consideration.

Q: One of the benefits of Masterspec (for example) is relying on the research to select comparable products. How can specifying in BIM make sure comparables exist and doesn't put more burden on the team to do this research? [Paul Duffy]

A: Mark Kalin: Oops, Masterspec is actually a specification writing system and not a product selection system. The comparison tables in the supporting documents are truly excellent, but when 20 products are listed it's the architect who will ultimately have to decide what's comparable.

A: Rob Dean: I agree with Mark that MasterSpec is not a product selection system, and neither is BSD SpecLink. However, SpecLink deliberately limits the number of manufacturers listed to a handful that produce comparable products, and those lists are updated each quarter. Ultimately, of course, Mark is correct when he says that the decision about what is comparable is the architect's.

Q: Has there been any analysis as to project size and scope where BIM specs do not make sense (efficiency/time/energy/updates) and the traditional methods are more appropriate? Do we see this as applicable to every project at some point in the future? [robert tieni]

A: Mark Kalin: In my experience, even architects designing house additions are using BIM.

A: Michael Brennan: Yes, we have some users that work on very small projects that enjoy the same benefits of the model/specification integration automation, QA and collaboration features. They typically use a small project document master that is appropriate for the project size and complexity.

Q: Any suggestions for how to include specifications for non-modeled elements (such as temporary facilities, as mentioned earlier)?[Robert Yori]

A: Mark Kalin: Hard copy, or a spec attic approach – enter the info at an elevation 200 feet over the model, so it can be searched but not interfere with the graphics. Robert Weygant of Sumex Design takes that approach; visit his website.

A: Rob Dean: My suggestion is they should be included in a project manual, which can be very short and simple for small projects or very detailed and elaborate for larger ones.

A: Michael Brennan: In e-SPECS we allows the users to specify and automatically include sections that may not have any direct model context, like some Division 1 sections for instance. This is done at the specification project level by project

account type.

Q: A record of the project needs also to be maintained at the moment(s) of its creation (design, construction, and ultimately maintenance), otherwise the system you are describing may update leaving the building manager with the physical reality from construction, but information that has continued to change and advance. [Luke McKneally]

A: Mark Kalin: Yes, certainly record copies of the model at different times are essential.

Q: One of the problems we have in construction is the large number of contractors who don't read well and DO NOT know the installation standards. Sometimes a written paragraph may be the better way to specify? [Jack Romigh]

A: Mark Kalin: Sorry to be crass, but if they don't read specs and drawings, how can they build what you want?

Q: In your experience who ends up being responsible for inputting spec data into the model? Spec writer or PA? How will this work? [Brett Wilbur]

A: Mark Kalin: Everyone has the option to input spec data. The specifier is the best candidate. If the modeler outputs a product spreadsheet from the model, the specifier can mark it up. Again [sumexdesign.com](http://sumexdesign.com) for the book on info in BIM.

A: Michael Brennan: We see a wide variety of uses in our experience. If there is a dedicated specifier on the project, generally the PA includes the correct assembly code (e-SPECS integration elements) for each model element and the specifiers correlate those codes to the required specification section criteria. Most engineers do it all.

Q: Where are the checks and balances coming into play? Now, a designer is producing a basic layout, a drafter is detailing the drawings and a spec writer is reviewing the drawings and creating a checklist of materials to produce specifications from. Where is the QC/QA? [James Spinola]

A: Mark Kalin: I really hope the QC/QA is in the exact same place as it is now. Lot's of hard work and close reading.

A: Michael Brennan: We are not removing the need for close oversight and QA, we are providing better tools to help that process with reconciliation reports from both the model and specification side.

Q: Can you address the general expansion of the 'consultants and trades' involved in building design, and how this will (or is) changing the scope and format of specifications? (For instance, user experience designers, or software engineers) [joe manganelli]

A: Mark Kalin: Most architects value the knowledge of the contractors, subcontractors and building product manufacturers. They should be most welcome in the process.

Q: You say BIM cannot be a "dumbing down", but so much of "innovation" in BIM lately seems to be exactly geared towards just that end, from the Contractor's point of view. And my interaction with contractors supports that this is generally their view of what they expect from BIM. And if anything is not correctly input or linked to other information, they see this as relieving all their responsibility or liability to review and coordinate the entire set of documents. This is one of the major problems in using BIM the way it is "envisioned" to work. The point on substitutions just made is a case in point. The Contractors generally would not want to take responsibility for coordinating the substitution back into the model information. They want the Architect responsible. This generates much more work burden and liability onto the Architect if the Architect agrees. The response that substitutions is not changed by BIM from the panel shows how BIM developers really don't understand how things work in reality. [Stephen Hilt]

A: Mark Kalin: Yes, the BIM developers need to understand practice better. But the AGC is the number one trainer for BIM, and the large contracting firms are putting large resources into the effective use of BIM, and some architects are looking forward to being the BIM-architect-of-record so they can get revenue from future work in the building.



Continue the discussion!

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