ATC-75
Development of IFCs for the Structural Domain

Dissemination Work Plan

October 31, 2008
Revised Release

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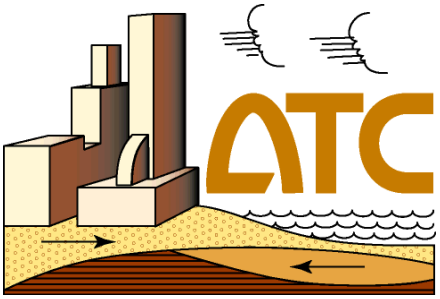

Charles Pankow Foundation

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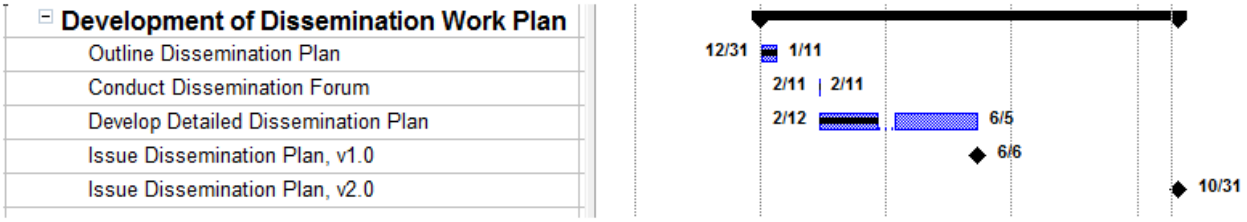
Preface

This Dissemination Work Plan is presented in two parts. Part 1 contains a plan for disseminating the results of our project on an ongoing basis, now to the end of the project, which is scheduled to complete in October 2009. Part 2 contains a plan, looking further ahead, for disseminating the results of our project after October 2009. This will describe how the final products will be disseminated and actions that will need to be taken such that the results will serve a wide range of audiences. It will also provide an effective methodology to keep our project results visible to practitioners/users.



PART 1 - DISSEMINATION

Goals

The benefits of interoperability among a multitude of software platforms are enormous. Interoperability creates the opportunity for the seamless integration of design activities in the workflow and the bridge to the vertical integration of design/construction/operation of a given facility. Industry Foundation Classes (IFCs) serve to provide non-proprietary, open exchange of data between different programs. The development of IFCs for the structural domain will create the opportunity to foster the interoperability between software platforms for structural systems.

The interoperability benefits of the IFCs developed for the structural domain will not be obtained unless their use is widely distributed and supported by a variety of software platforms. To achieve penetration into the engineering profession the implementation of IFCs must first be supported by the software developers who create the software programs used by practitioners. Thus, while the major benefits of interoperability are received by the practitioners, the means to accomplish this rests with their implementation by the software developers.

This creates an interesting challenge in that the ultimate users of the IFCs for the structural domain, the practitioners, are not the group that needs to be targeted for their implementation. And while the software developers must be targeted to enable the use of IFCs, they do not necessarily receive a direct benefit from their use. The effective dissemination of IFCs will require a plan that encourages practitioners to seek the benefits from their use, while rewarding the software developers for enabling their operation.

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Objectives

The objective of this project's dissemination is twofold: first, to reach the largest possible audience of practitioners and encourage their belief in and demand for functional interoperability; and second, to reach software programmers and sales representatives and facilitate their involvement in a community effort to enable full, robust, and trustworthy interoperability. Although the former objective is the primary focus of Part 1 of this report, the latter is also an objective of Parts 1 and 2, with efforts that have been underway from the beginning to involve all appropriate software programmers and sales representatives.

Users

There are two groups of "users" for this end product – design and construction professionals in the day-to-day practice of their profession, and the software development companies who supply the professionals with critical software tools.

Engineers, architects, fabricators and construction managers make use of the software tools that are available. In limited cases, they can invest in the development of software to support specific interoperability when this is not otherwise available. This, however, is limited to only a few of the largest firms. It is imperative that we catch the attention of the majority of design and construction firms and prove that there is indeed a better, more efficient, trustworthy way to exchange information. The exchange or interoperability of information at very high fidelity is key, as anything less represents only a slight improvement of the status quo.

Software providers are driven by market forces. They must first be made aware that this level of performance will be expected in the near future, so that they are able to prepare a way for the promised progress; once this concept is "on the radar", they will respond when their customers begin to demand it.

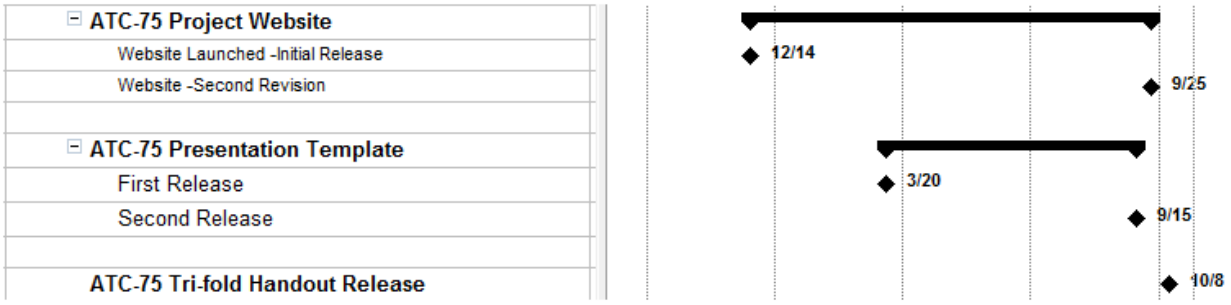
Content

An IFC exchange is limited by the effectiveness of the translation and the quantity and quality of the information available to be exchanged. Much work has been done by international concerns in the standardization of IFCs. While this project will continue to refine the IFC model for North American business practices, the true value of this work is in the identification and rectification of the current breakdowns in data transmission from software package to software package.

Access

The Applied Technology Council has a proven track record in helping move technical information from research into practice. All materials developed for this project are available for public review at http://www.atcouncil.org/atc75.shtml, making it easy for those who hear of the project - through seminars, conventions, a colleague or a magazine - to access the raw materials and other relevant project data . IFCs themselves are public domain, freely available for anyone's use. Those who deal with industry software are well-acquainted with the various IFC internet discussion boards and blogs and the institutions and people who are working toward the goal of total interoperability. At any point during the life of the project, interested parties are invited to join at whatever level of participation they are interested in, in hopes that they will both enhance the project itself and help to spread the word to as wide an audience as possible. To help facilitate the dissemination of the project activities, a PowerPoint presentation template was prepared along with a project tri-fold promotional brochure.

This material has been made available to the broad community of project participants to use at any number of speaking engagements that they may have the opportunity to be involved with. This helps to convey a consistent message and reduces the burden on our speakers for preparation, making it very convenient for them to talk about the project.



Availability

Our dissemination strategy hinges on total transparency throughout the life of the project, and an open attitude toward new participants and their opinions and information. This project will be NBIMS-compliant, meaning that all information is based on an open-source model of community-wide collaboration. Therefore, it is relatively easy to gain access to speaking engagements and existing workgroups. The IAI and NBIMS, among many others, are at the forefront of the interoperability movement, and those with even the most peripheral knowledge of the movement are aware of them; their websites and publications will broadcast information about this project along with other related work.

Additionally, when software vendors have the ability to provide the level of interoperability that this project is working toward, they will advertise it! The two-part strategy that we are embracing will provide an organic, synergistic growth of supply and demand.

Action Required

This report contains a series of Appendices detailing the opportunities for dissemination through the duration of this project. Appendix A is a listing of our Project Management Committee members. It indicates the depth and breadth of the multidisciplinary team we have assembled to develop the results. Additionally, as leaders in their respective fields, they reach out to colleagues and peers on a daily basis, advocating the review, refinement, and use of our results. Appendix B provides a list of professional and trade associations that we have targeted for dissemination opportunities, along with PMC members identified as lead contacts. This is an ongoing awareness and advocacy effort. Appendix C provides a listing of Seminars and Conferences that have been attended by project team members wherein they provided presentations on project status and results to date. Further, it contains the upcoming events between now and October 2009 which project team members might attend and provide presentations of project results, along with a prioritization of each organization's relative importance to the effort (scale of 1 to 5, with 1 being the highest priority). Additionally, Appendix D provides a listing of publications and articles submitted to date, and a listing of scheduled article submittal deadlines by project team members on project status and results between now and October 2009, similarly prioritized on a scale of 1 to 5. By reaching industry representatives, speaking at conferences, publishing

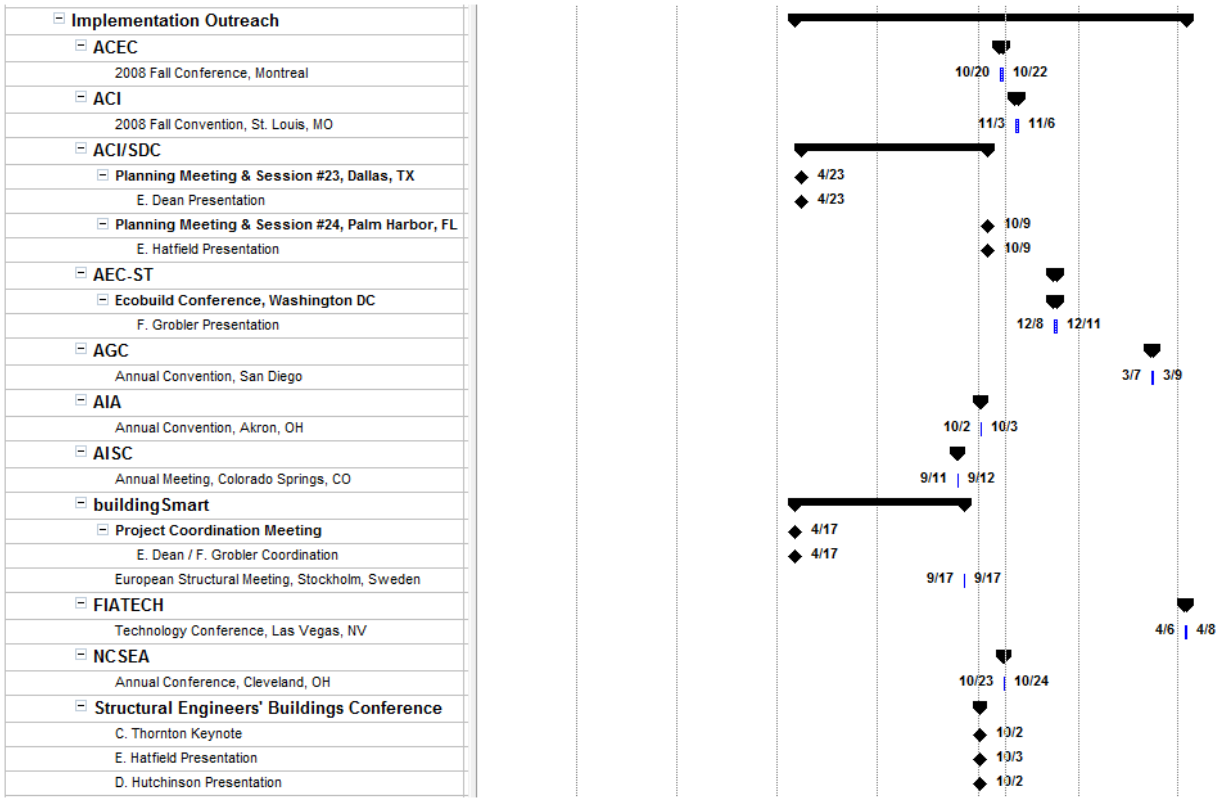
in journals and magazines and simple word of mouth, this project's goals and progress are being made known throughout the AEC community.

Dissemination Efforts to Date

To date, our team has been successful in promoting and raising awareness about the project through several methods. The widest dissemination has been through the recruitment of the Project Advisory Panel and Project Management Committee members, and the project work sessions conducted with these participants. At the work sessions, those already involved with the project have received valuable information about the project and the benefits of their involvement, as well as PowerPoint presentation templates for their use at their speaking engagements. As they return to their workplaces and professional circles, they have recruited new participants and directed many more interested parties to the project website. The presence of the project's ATC website has spurred many interested parties to contact Ed Dean for more information, and several have joined the project as reviewers/commenters.

Ed Dean (Lead Technical Director) and Erleen Hatfield (Project Management Committee) have spoken at industry events, and various PAP members have inserted information about this project to their pre-existing appearances at various events. Articles are in-work for Modern Steel Construction and the BIM Journal.

In October 2008, Michelle Anderson created and distributed a brochure summarizing the project, which can be printed on demand and be handed out by participants at relevant events.



Dissemination Efforts to be Completed by October 2009

The project team has set goals for ongoing dissemination, as presented in Appendices C and D to this report. Appendix B notes the trade association contacts, which will be mined for further opportunities. The publications and events in Appendices C and D represent a targeted list, and it is anticipated that a large portion of these opportunities will be realized. It is yet to be determined how many participants will be scheduled to appear at the events, but we will optimize our opportunities to get the word out in this personal way. We will also be persistent in preparing articles for publication in targeted publications, although there is no guarantee that articles will be published.

Additionally, the most recent work session gave rise to a resolution to develop digital databases of materials in conjunction with the applicable trade associations (steel, wood, concrete). The efforts of the project members in this arena will not only bring these trade associations into the fold, but will also create incentives for them to tout their involvement in this project and the work that they do as a result.

PART 2 – CONTINUUM of DISSEMINATION

Actions to Serve a Wide Range of Audiences

The design and construction community, and the community of software providers that serve it, have a well-established network for promoting new research, advanced capabilities, and products. A myriad of technical associations, materials associations, vendor groups and software user groups exist and can be utilized to disseminate this work. Industry publications reach practitioners and software developers daily. The ATC-75 Project Team has worked to include representatives from four arenas – practitioners, software providers, industry representatives and research/academic professionals – and their existing networks will be plumbed for opportunities to speak at gatherings and publish findings in journals and magazines.

Keeping Results Visible to Practitioners/Users

Practitioners have a vested interest in providing services to their clients at competitive prices, and the results of this project will allow for more efficient and effective design services. Therefore, from their initial introduction to this effort, it is hoped that they will be excited, and that they will want to know more. The project website serves as a quick update, but one that is only reached through conscious effort. On a more passive level, practitioners will receive the benefits of this project in their software updates over the next year.

The involvement of Robert Lipman of NIST and Rasso Steinmann of Nemetschek (Project Management Committee) augments our audience to include a new interested community in the area of testing procedures. NIST is currently developing a testing concept for interoperability exchanges and Mr. Steinmann has recently launched an online testing database. Although this is an area of primary interest to software developers, through their attention, the work of this project will continue to flow down to products that are literally delivered to the target audience's doors.

Nearly all of the dissemination opportunities identified are cyclical. At the completion of this project, it is expected that the project participants will revisit many of the same dissemination venues they have

utilized during the project. Naturally, they will update their audience on the progress and results and whet their appetite for the new tools.

Medium

It is expected that the most effective media for primary dissemination will be face-to-face promotion at events and word-of-mouth "buzz" generated by the participation of this well-placed and widely varied group. The secondary media will likely be magazines and websites, where, it is hoped, articles about the project's progress and goals will spark interest among the various concerned communities.

As to diffusion, in the longer view, this project has the benefit of its unique set of participants. With the software representatives currently involved, it is (conservatively) estimated that 80% of the US market can be reached simply through the releases of new versions of software. Those software providers will, as a matter of course, include promotional verbiage in their release notes to let their customers know what improvements are contained within; in essence the seed planted in this project will grow and flourish through their own marketing efforts and self interest.

Future Progress

The ATC-75 project is the first broad-based effort to define IFCs for the structural domain. As such it is well positioned to chart the course for future efforts. A great deal of effort has been invested in taking a broad perspective in structural interoperability while at the same time focusing on developing IFCs that will provide the greatest benefit to our profession within the funding and schedule constraints of this initial effort. Our initial focus is on the exchange of geometry and properties, since these transcend the entire exchange pathways from engineering to architectural to the construction domains and is the most fundamental data to be exchanged.

In the ATC-75 effort, a broad spectrum of potential exchange attributes has been identified. Even so, many more exist and are yet to be defined. A valuable future effort to build an even broader inventory of exchange opportunities and priorities would set the stage for many other industry participants to take up the challenge of developing IFCs. Through funded efforts and collaboration between practitioners, industry and software companies, strategically focused efforts can be brought to bear to target and drill down into specific exchange domains. For example, the steel industry could develop IFC exchange protocols to address the detailed exchanges to support detailing; likewise the concrete industry could target the very challenging process of exchanging detailed reinforcing bar and complex geometry exchanges. The ATC-75 project has championed a project model to define structural interoperability IFCs, but this is only a beginning and many more IFC opportunities lay waiting to be developed. This continuum of future IFC development will be the most visible and longest lasting legacy of the ATC-75 project. The ATC-75 project is only a beginning; much opportunity exists in the future of interoperability.

Diffusion Report

A diffusion summary report will be developed. This report will capture the effectiveness of the dissemination process by summarizing the diffusion success, documenting the implementation of the dissemination strategy and seeking out measures to quantify the effectiveness of the plan.

Appendices

The following Appendices provide information on specific organizations and other entities that we will target/have targeted for dissemination. These Appendices will be updated periodically as more results become available:

APPENDIX A - our Project Management Committee members

APPENDIX B - professional and trade associations that we have targeted for dissemination opportunities, along with PMC members identified as lead contacts

APPENDIX C – relevant seminars and conferences we have identified as potential opportunities for outreach activities, such as paper presentations, session presentations, etc.

APPENDIX D – relevant publications/periodicals/websites that we will provide content to in order to disseminate our results

Appendix A – PMC Participants

Participant	Company	Role
Wai Chu	Autodesk	Software Representative
Santanu Das	Bentley	Software Representative
Brad Douglas	AF&PA	Industry Representative
Luke Faulkner	AISC	Industry Representative
Erleen Hatfield	Thornton Tomasetti	Lead Engineering Consultant
Raoul Karp	Bentley	Software Representative
Thomas Liebich	AEC3, Ltd	IFC Consultant
Robert Lipman	NIST	Engineering Consultant
Nicolas Mangon	Autodesk	Software Representative
Chi Ng	Gehry Technologies	Software Representative
Herman Oogink	SCIA W+B Software BV	Software Representative
Stacy Scopano	Tekla	Software Representative
Paul Seletsky	Skidmore, Owings & Merrill LLP	Architectural Consultant
Matthew Senecal	ACI	Industry Representative
Douglas Sordyl	SDC	Industry Representative

Participant	Company	Role
Rasso Steinmann	Nemetschek Technology GmbH	Software Representative
Rob Tovani	CSI	Software Representative
Angel Velez	Autodesk	Software Representative
Frank Wang	Tekla	Software Representative
Aaron White	Walter P. Moore and Associates, Inc.	Engineering Consultant
Tom Williamson	APA	Industry Representative

Appendix B – Professional and Trade Associations

Association	Website	Target Audience	PMC Contact	Accomplishments
ACEC	acec.org	Engineering	E. Dean	
ACI/SDC	concrete.org	Engineering /Construction	E. Dean	E. Dean presented ATC-75 at SDC #23 on 4/23/08
AGC	agc.org	BIM Forum	E. Dean	
AIA	aia.org	TAP Groups, Large Firm Roundtable	P. Seletsky	
AISC	aisc.org	eConstruction	L. Faulkner	
buildingSMART Alliance	buildingsmartalliance.org	IAI, NBIMS	F. Grobler / E. Dean	BIM Project Coordination (4/17/08)
FIATECH	fiatech.org		F. Grobler	
NCSEA	ncsea.com		A. White	
PCA	cement.org		E. Dean	
PCEA	pcea.org	Cost Estimators	E. Dean	

Appendix C – Seminars and Conferences

Association	Seminar/Conference	Location	Accomplishments	Priority
ACEC	Apr. 26th-29th, 2009 Annual Convention	Washington, DC		5
	Oct. 7th-10th, 2009 Fall Conference	Palm Springs, CA		5
ACI	Nov. 2nd-6th, 2008 Fall ACI Convention	St. Louis, MO		3
	Mar. 15th-19th, 2009 Convention	San Antonio, TX		3
AGC	Mar. 4th-7th, 2009 AGC's 90th Annual Convention	San Diego, CA		2
AIA	Apr. 30th-May 2nd, 2009 National Convention	San Francisco, CA		3
AISC	Sept. 24th-25th, 2009 AISC Annual Meeting	Braselton, GA		2
ASCE/SEI	Nov. 6th-8th, 2008 ASCE 138th Annual Civil Engineering Conference	Pittsburg, PA		3
buildingSMART Alliance	Oct. 2009			1
ACI/SDC	– SDC Meeting #23, April 22-23, 2008	Dallas, TX	E. Dean presented ATC-75 at SDC #23	2
	– SDC Meeting #24, October 9-10, 2009	Palm Harbor, FL	E. Hatfield presented at SDC #24	2
	– Oct. 2009			
FIATECH	Apr. 6th-8th 2009 Technology Conference	Las Vegas, NV		1
NCSEA	Oct. 15th-17th, 2009 Annual Conference	Scottsdale, AZ		2
PCA	Oct. 2009			3

Association	Seminar/Conference	Location	Accomplishments	Priority
AEC-ST	Dec. 8-11, 2008 Ecobuild Conference	Washington, DC	F. Grobler will present	1
ZweigWhite SE Buildings	October 2-3, 2008	Atlanta, GA	C. Thornton D. Hutchinson E. Hatfield	2

Appendix D – Publications

Publications	Website	Publication Deadlines	Accomplishments	Priority
ACI	concrete.org	8 weeks prior to publication		3
AEC Bytes	aecbytes.com			5
Architect	architectmagazine.com	2 months prior		4
Architectural Record	archrecord.construction.com	2 months prior		3
BD+C	bdcnetwork.com	Before the 3rd week of the month		4
BIM Journal buildingSMART	goliath.ecnext.com	Quarterly	F. Grobler abstract submission on 4/15/08	1
BOMA Magazine	boma.org	1st Monday of every even month		5
CE News	cenews.com	Last week of the month prior to issue		4
Civil Engineering Magazine	asce.org	2 months prior		4
Construction Specifier	constructionspecifier.com			2
ED+C	edcmag.com	2nd week of the month		4
ENR	enrconstruction.com (Nadine Post)	Weekly publication deadlines on Tuesday		2
Modern Steel Construction	modernsteel.com	90 days prior to the issue month		2

Publications	Website	Publication Deadlines	Accomplishments	Priority
Structural Engineer	gostructural.com	60 days prior		1
Structure	structuremag.org	5th of the month prior to the issue month		1