

These are the unedited brainstorming ideas that were generated at the CIS/2 Workshop on 11 May 2010 at NASCC in Orlando, FL. The comments in parentheses were not part of the ideas. They are part of the discussion about that particular idea. Common ideas have been grouped together.

- Improve leadership from AISC (need leadership to implement solutions)
- What happened after 2006, why the gap, lost the push (AISC issue)
- Independent organization with sub-committees (something other than AISC, committees regardless of who leads)

- Up to date sample CIS/2 files (old ones available, need new ones, beginning of testing)
- Make sure software developers have conforming implementations (conformance testing, use Express Engine or other tools with toolkits)
- Validation procedures and programs (testing, etc.)
- Certification (testing, requires effort to develop and funding)
- Certification site (test, plans, etc)

- Exchange model definitions – what’s required and how – what’s optional (process mapping, testing, etc.)
- Ability to get the same info from 2 or more software packages – standard information for model exchanges (process map, model view)

- Validator – why did my CIS/2 file crash? (exchange not working, document problems, fixing them, need software to validator, feedback to software vendors, use Express Engine a free STEP file conformance checker)
- From a constructor’s perspective, CIS/2 would benefit by better importing into Navisworks, Revit (implementation issue, exchange not working, document problems, interface issues)
- The exchanges don’t work, you loose too much (implementation issue, exchange not working, document problems)
- Exporting Tekla into Navisworks, CIS/2 or IFC (exchange not working all the time, document problems, fixing them)
- Exporting Revit into Tekla, IFC
- Clash detection in Navisworks (it’s not BIM)
- CIS/2 going to Tekla most of the time needs translation (implementation issue, exchange not working all the time, document problems, interface issues)
- CIS/2 when imported by Revit has problems with complex geometry (implementation issue, exchange not working all the time, document problems, interface issues)
- CIS/2 is good to export into Navisworks (good)

- Simple map of how each group would use CIS/2 – engineer – detailer – fabricator – erector (process map, marketing vs. technical, website, test files)
 - Educate each group with pro's
 - Simple example for each group
- Awareness of successful collaboration using CIS/2 (success stories, case stories, marketing)
- Educate owners (about CIS/2, interoperability, show how it could save money)
- Establish BIM model best practices (for eng/designer) in order to share CIS/2 files that are usable/productive for details/fab (education issue, process map)

- CIS/2 specific file writer/reader toolkit (in .NET) (big expensive effort, IFC has lots of commercial and free toolkits, learn from IFC toolkits)
- Developer cost for STEP tools prohibitive (need XML format, other toolkit)
- Industry needs an IFC to CIS/2 translator (previously developed at GT, never implemented, many-to-one mapping, what's the workflow)
- CIS/2-IFC translator (keep going) can it be embeddable in 3rd party packages (SteelVis, it is embeddable, sort of, it is embedded in FabSuite and StruWalker Plus)

- Uniform support for unique ids (GUID)
- Better utilization of GUIDs (see above)
- Enforce GUID to enable round trip (see above)

- Standard shape descriptions based on AISC specifications (an issue for CIS/2 and IFC, non-AISC section names, update naming document and AISC tables, ASTM naming, CIS/2 flavor file)
- Standard naming of section profiles (see above)

- Transfer of all member end load conditions: shear, axial, moments, etc. from engineer model to fabrication model (CIS/2 can do it, better implementations, workflow, educate engineer to provide info)
- Top of steel elevations (workflow)
- Work point locations (workflow, cardinal point for gauge line)
- Material grades (workflow)
- Non-standard / curved material (workflow, implementation, agreement on curve geometry)

- Better resources for complex graphical geometry (non-standard cope, end cut, update schema)
- Better or more standard template end cuts moment end preps (rat holes, other standard cuts, etc in CIS/2)
- Better support of welds and weld preparations chamfers (software implementation, CIS/2 schema)
- Develop connection related stuff (associate parts together by weld information, part A welded to part B, schema issue)
- Concrete – not covered at all (workarounds, implementers agreements, IFC to CIS/2 issue)

- How or should CIS/2 work more with the IFC groups (great question, more people here involved)
- IFC is easier to use (yes, no, maybe)
- Workarounds for IFC2x3 for steel (can't wait for 2x?, what can work now, work with IFC structural group)
- Adoption by GSA (similar to IFC, need to talk to them)
- Current contact information for software vendors (have some, need more, get them involved)
- Get all CIS/2 software developers engaged
- More people involved solving technical issues

The following are some broad characterizations of the brainstorming ideas above.

- Exchange not working all the time, document problems, fixing them, engage software developers
- Interoperability
- Schema enhancements vs. Software improvements
- Place to put problem models, public vs. private files, sample files, effective mechanism to fix problems
- Vendor contact list, forum
- Everything related to IFC, more involvement with IFC committees, structural group
- Funding sources (AISC, Pankow, new revenue model, something else)
- Marketing, education
- Model view definition
- Steel industry focus on one standard – CIS/2