



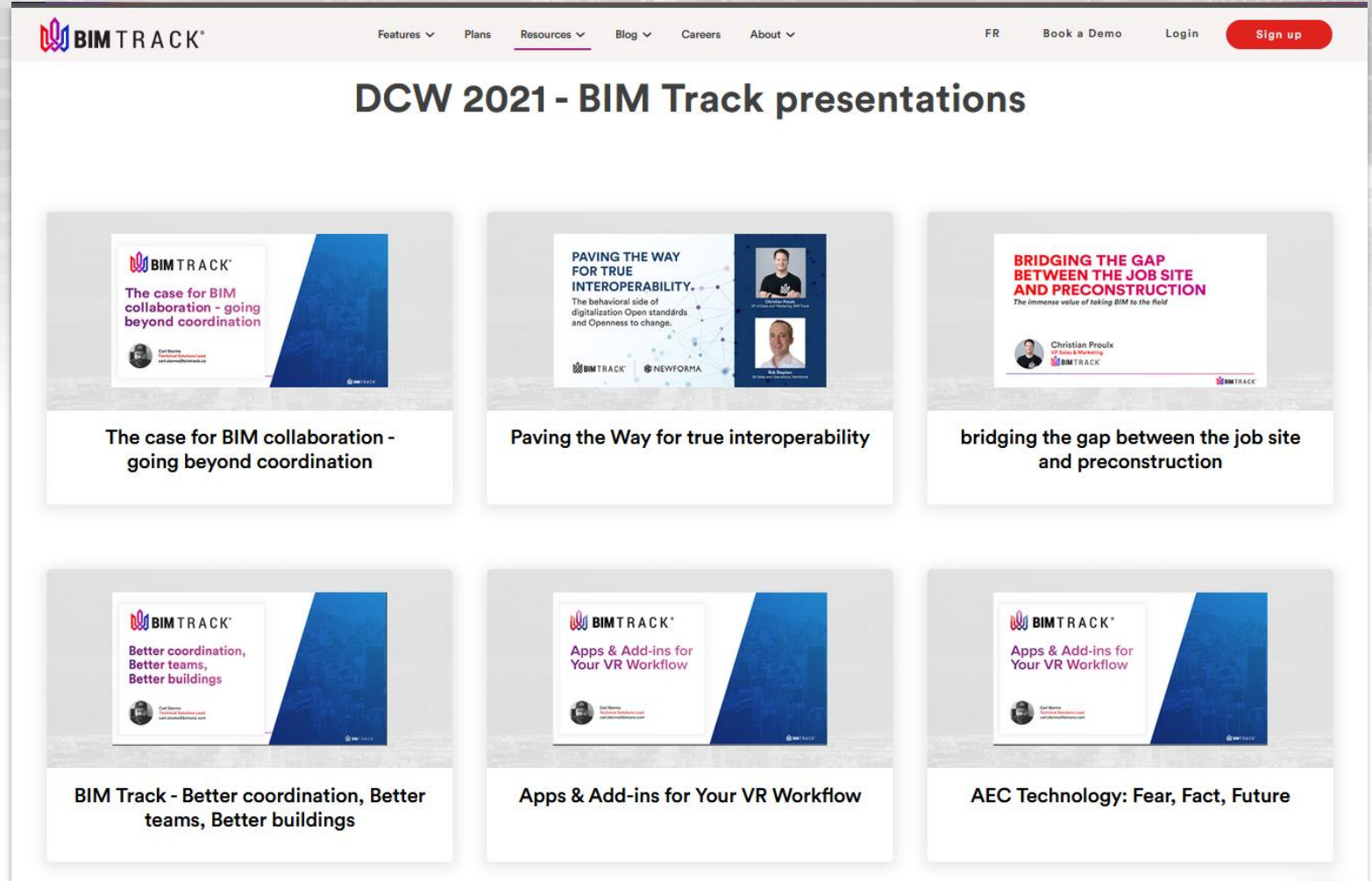
The BCF: Bringing Sexy Back









Carl Storms
Technical Solutions Lead
carl.storms@bimtrack.co

Session *Presentation* Available Here

[*bimtrack.co/dcw*](https://bimtrack.co/dcw)



The screenshot displays the BIM Track website's 'DCW 2021 - BIM Track presentations' page. The navigation bar at the top includes links for Features, Plans, Resources (highlighted), Blog, Careers, and About, along with a 'Sign up' button. The main content area features six presentation cards arranged in a 2x3 grid. Each card includes a thumbnail image, a title, and a brief description.

Thumbnail	Title	Description
	The case for BIM collaboration - going beyond coordination	The case for BIM collaboration - going beyond coordination
	Paving the Way for true interoperability	The behavioral side of digitalization Open standards and Openness to change.
	bridging the gap between the job site and preconstruction	The immense value of taking BIM to the field
	BIM Track - Better coordination, Better teams, Better buildings	BIM Track - Better coordination, Better teams, Better buildings
	Apps & Add-ins for Your VR Workflow	Apps & Add-ins for Your VR Workflow
	AEC Technology: Fear, Fact, Future	AEC Technology: Fear, Fact, Future

Agenda

- **Introductions**
- **What is BCF**
- **Why BCF**
- **Issue Tracking**
- **Final Thoughts**
- **Questions**

Introductions

HELLO
MY NAME IS



Carl Storms
Technical Solutions Lead
carl.storms@bimtrack.co

Your *Speaker*



Carl Storms

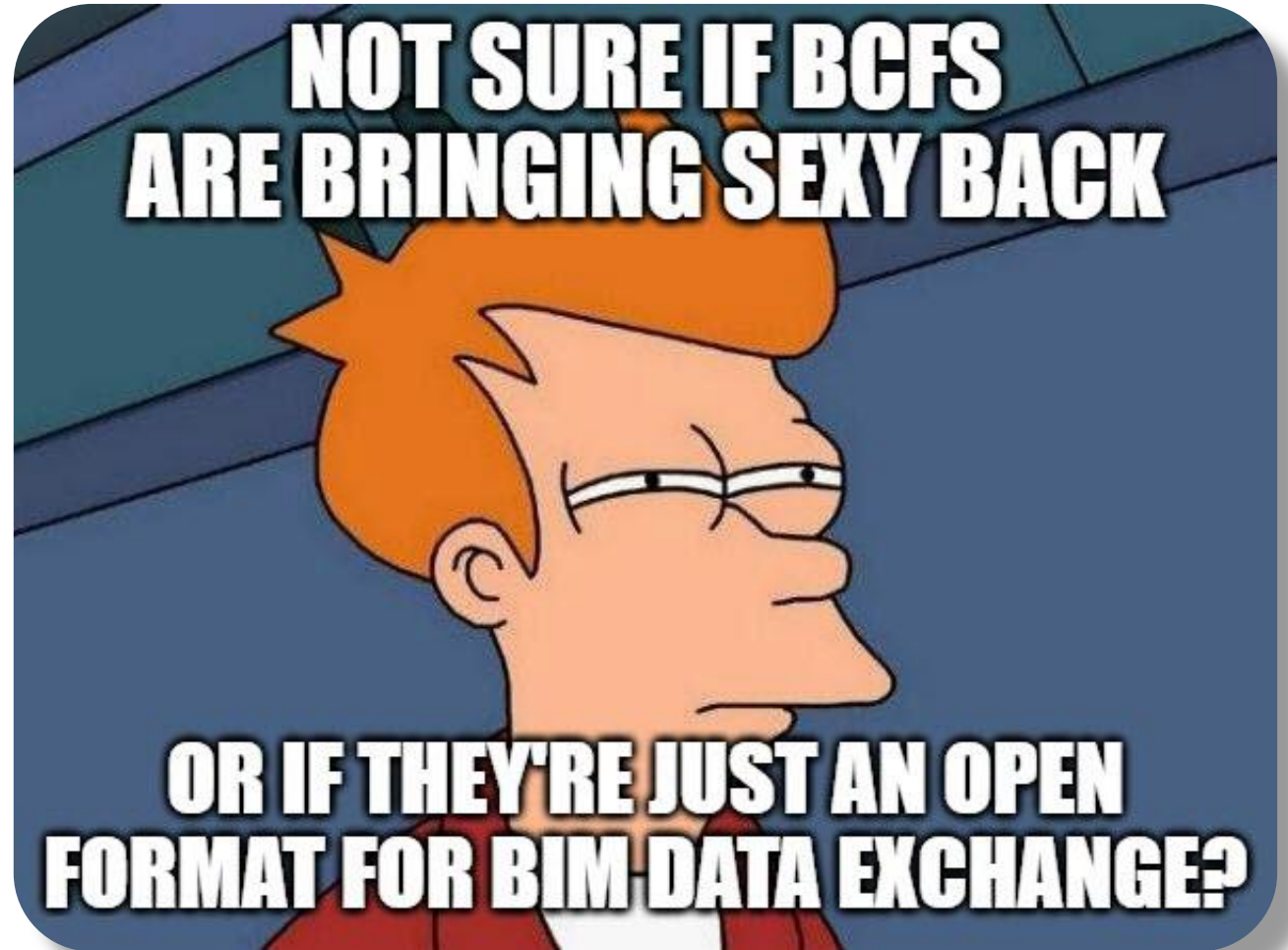
Technical Solutions Lead | BIM Track

Email: carl.storms@bimtrack.co
Website: [BIM Track](#)
Twitter: [@theBIMsider](#)
Blog: [The BIMsider](#)
LinkedIn: [Carl Storms](#)
Podcast: [BIMThoughts](#), [BILT Academy Podcast](#)
[The Simply Complex Podcast](#)

- Worked in Residential & Commercial Architecture
- Worked in Commercial Construction (BIM/VDC)
- 10+ Years as a Collegiate & Industry Instructor
- Working with CAD
Since 1993, using since 1989
- Involved in the AEC Industry
Since 1998
- Utilizing and Advocating BIM
Since 2008
- Global Conference Speaker
Since 2014
- Autodesk Expert Elite

Tailored *Expectations*

Maybe a little
clickbait



Tailored *Expectations*

Morning Caffeine



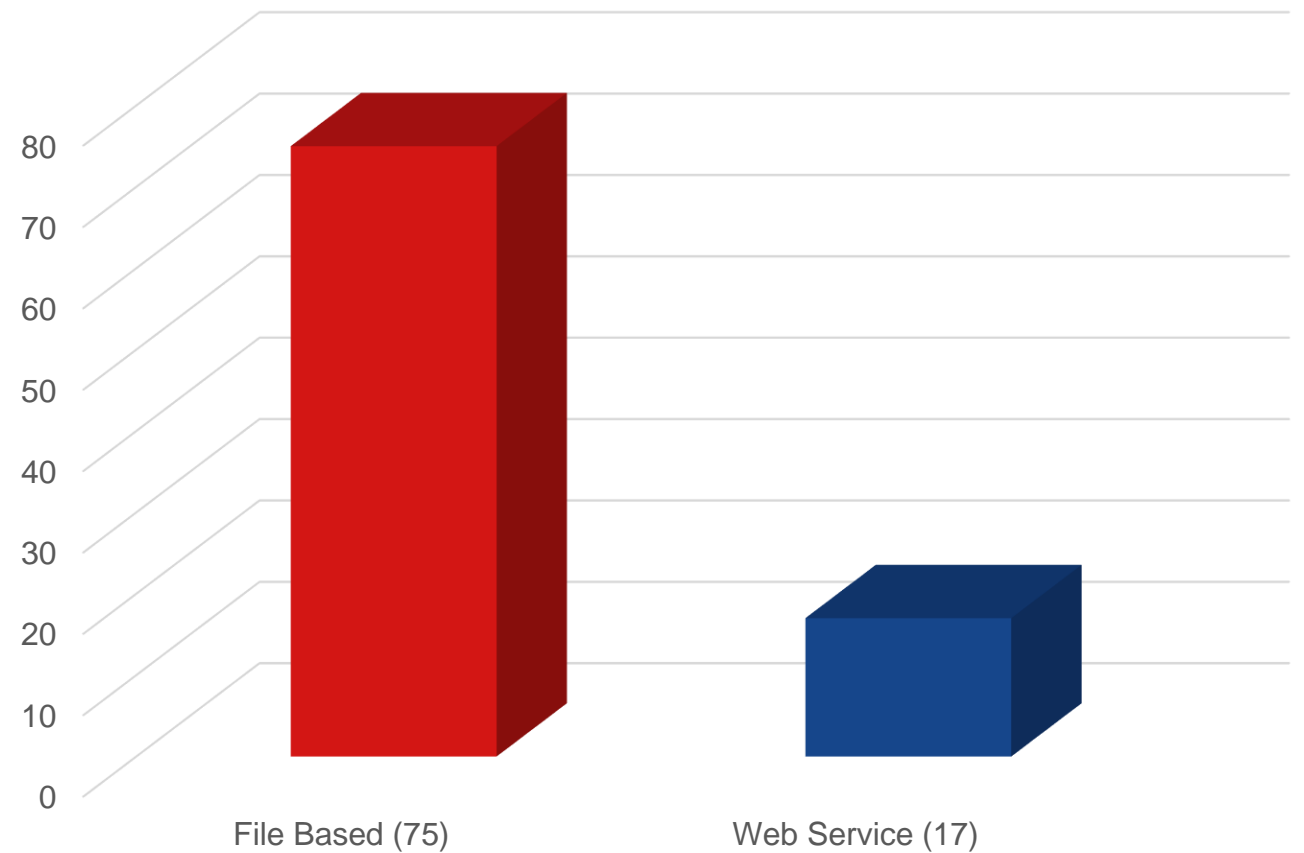
Tailored *Expectations*

BIM Collaboration Format



BIM TRACK®

Products Supporting BCF

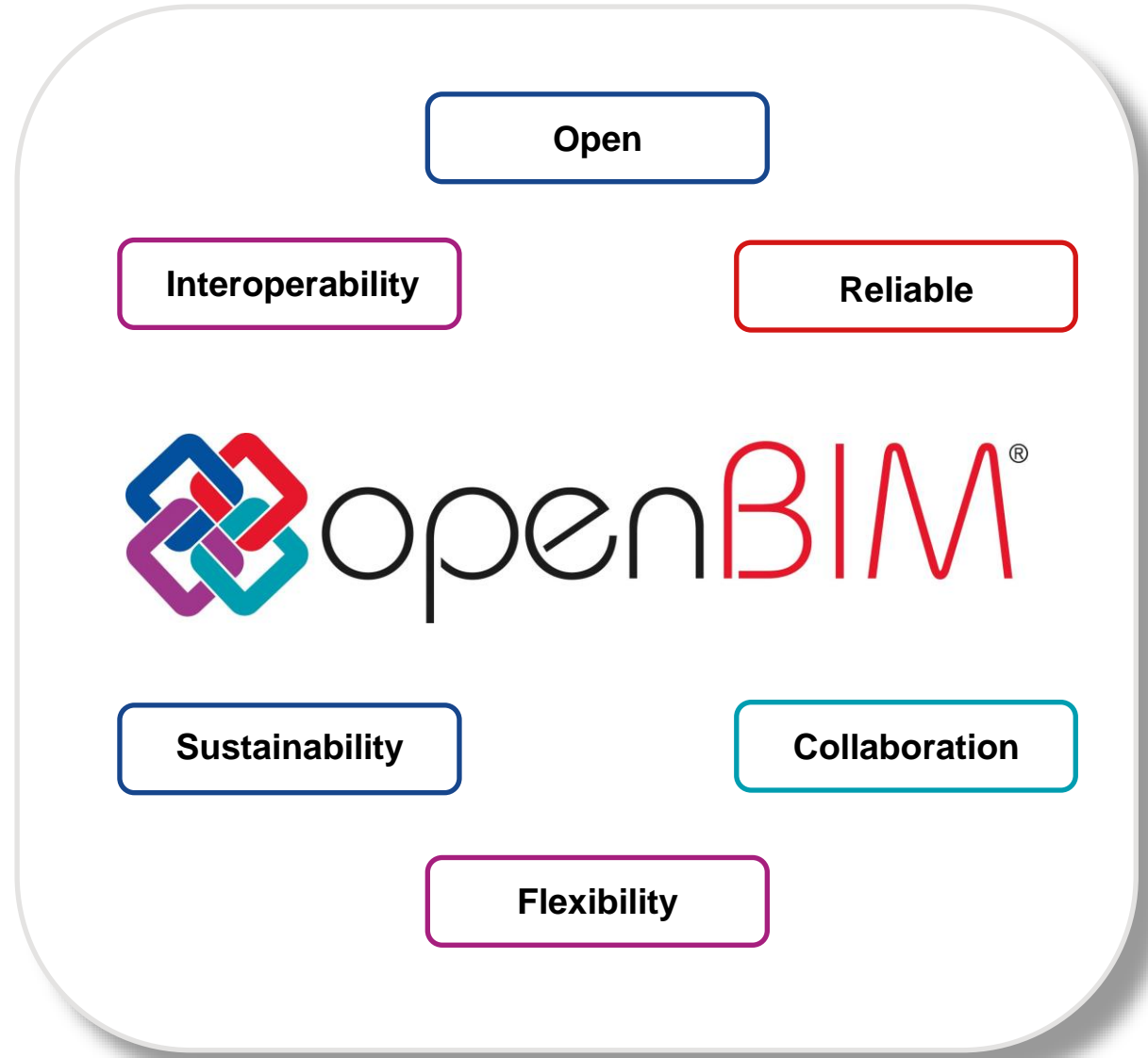


What is BCF



What is **BCF**?

BCF is:
open**BIM**



What is **BCF**?

BCF is:

BIM

Collaboration

Format

“The BIM Collaboration Format (BCF) allows different BIM applications to communicate model-based issues with each other by leveraging IFC data that have been previously shared among project collaborators.”

[buildingSMART International](#)

What is **BCF**?

BCF is:

BIM

Collaboration

Format

“The BIM Collaboration Format (BCF) is a structured file format suited to issue tracking with a building information model (BIM).”

[BIM Collaboration Format Wikipedia](#)

What is **BCF**?

BCF is:

BIM

Collaboration

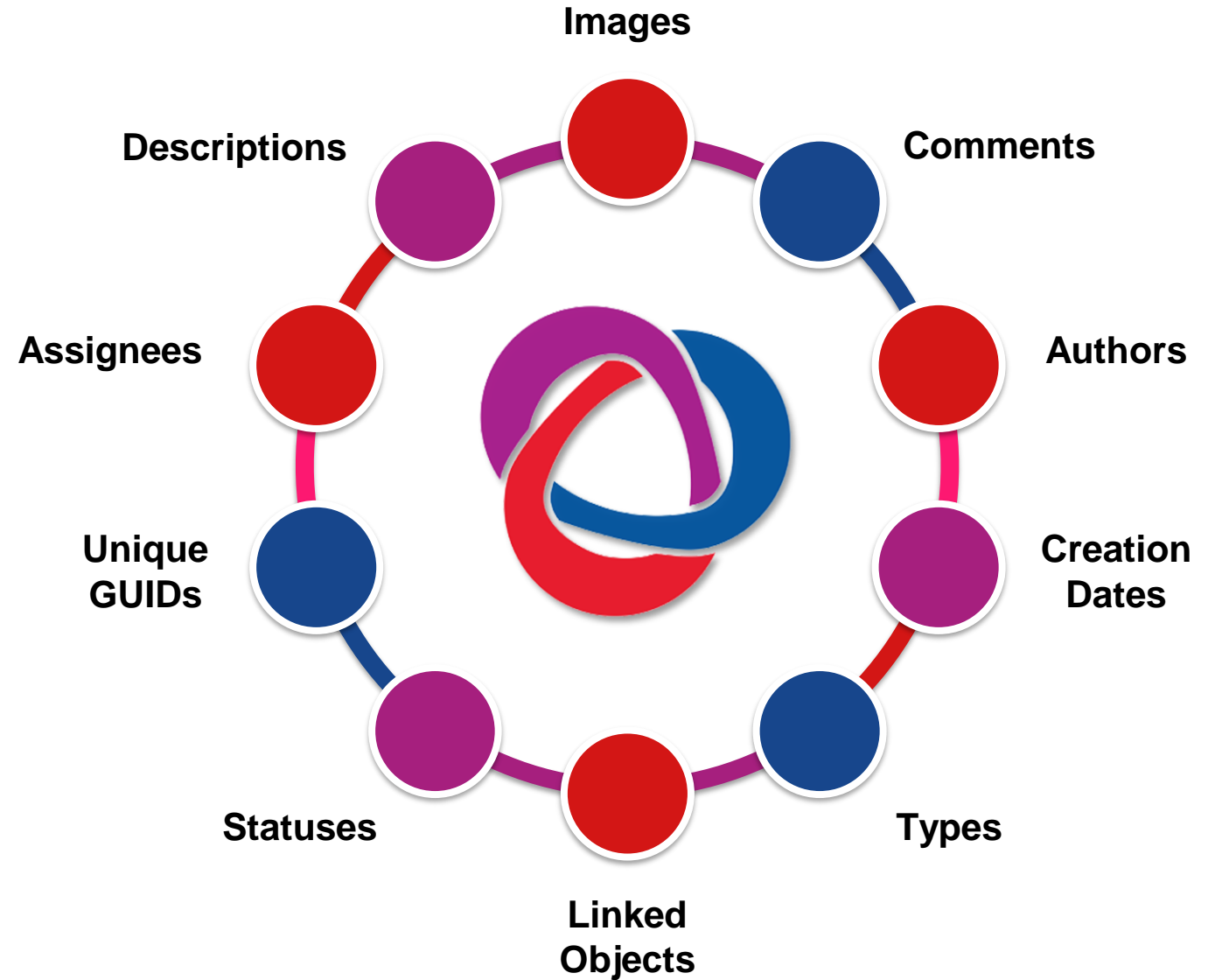
Format



BCF is an open
Data Exchange
format for BIM

What is **BCF**?

What is Contained in a **BCF**



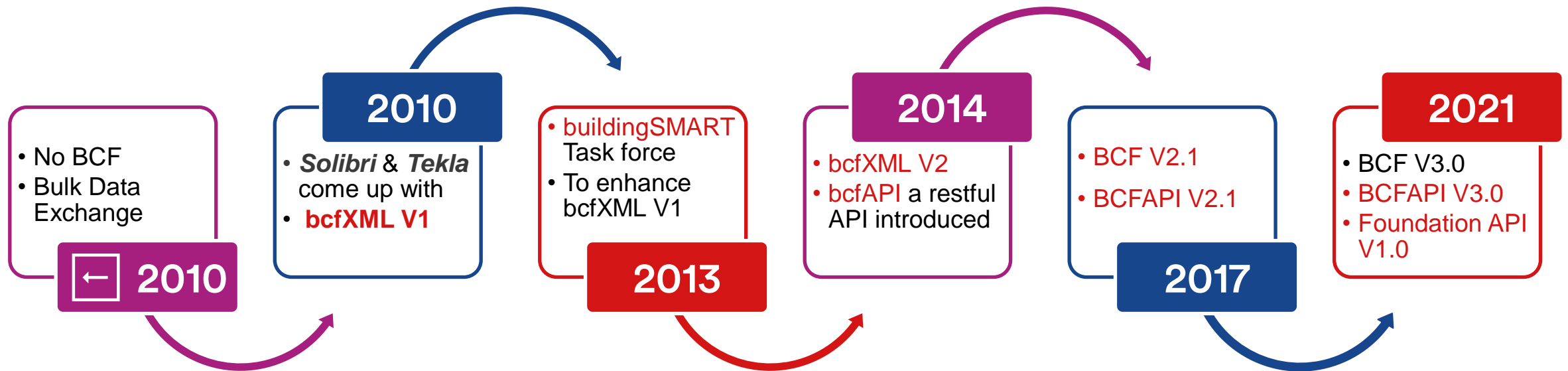
What is **BCF**?

What is Contained in a **BCF**

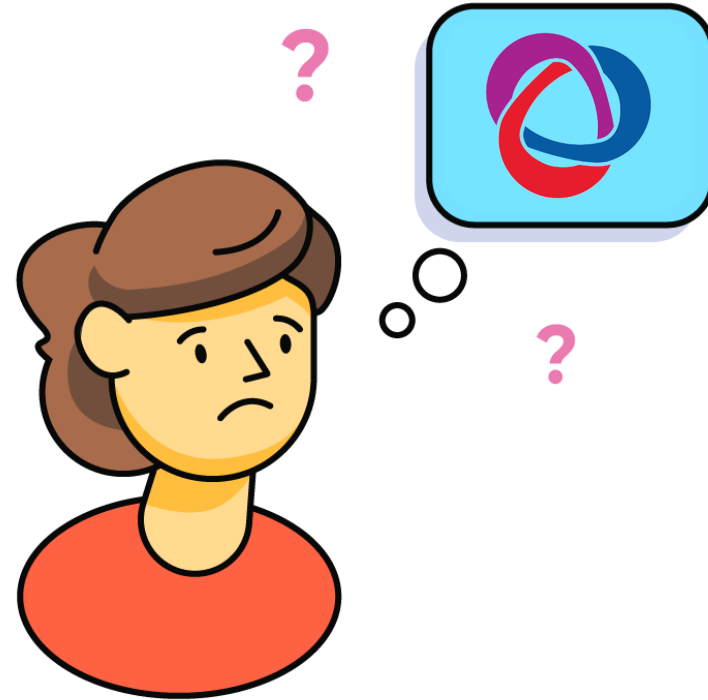


What is **BCF**?

How did it **Start**?



Why BCF



Why **BCF**?

Its **Flexible**

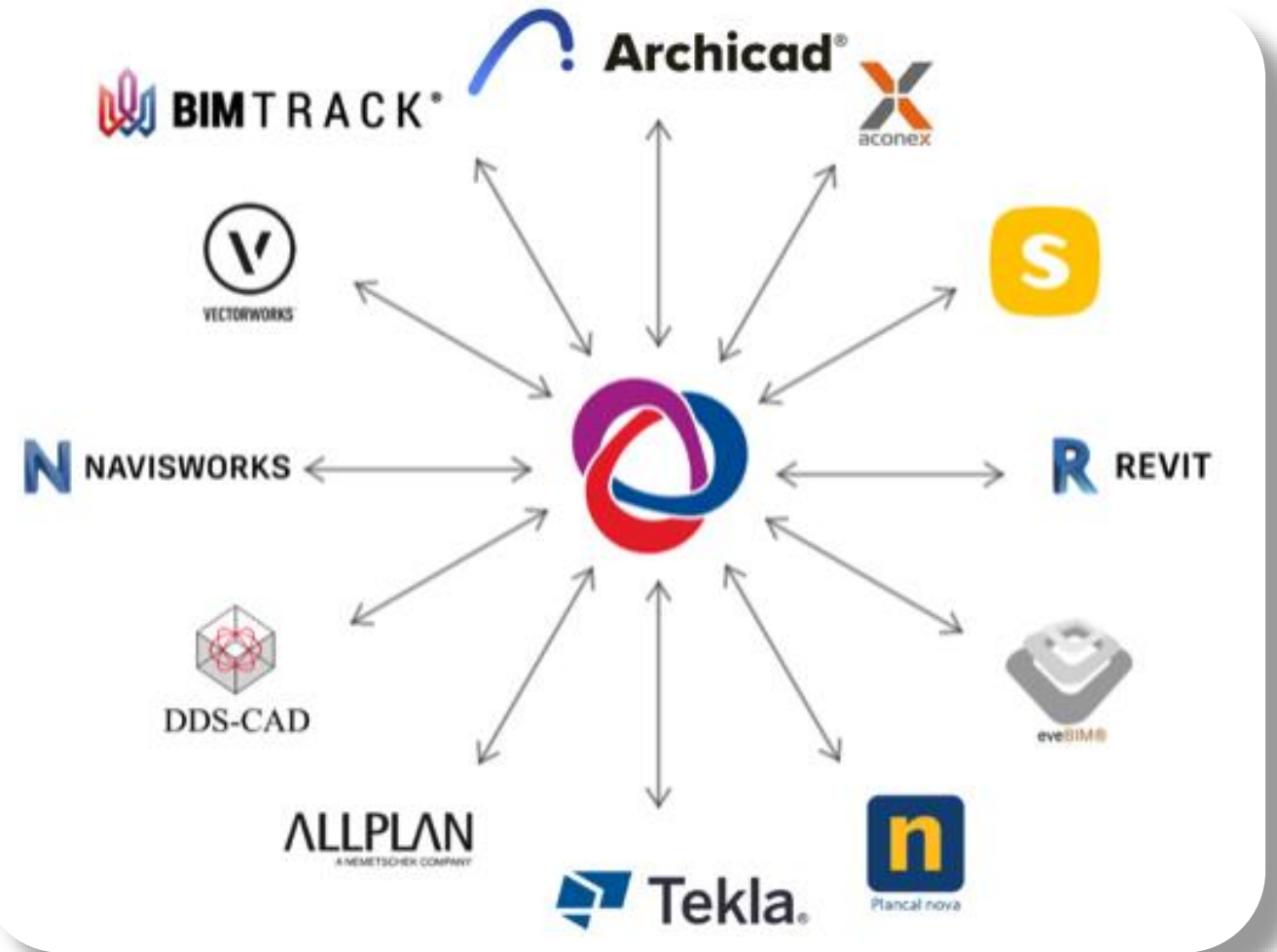
- Open Standard



Why **BCF**?

Its **Flexible**

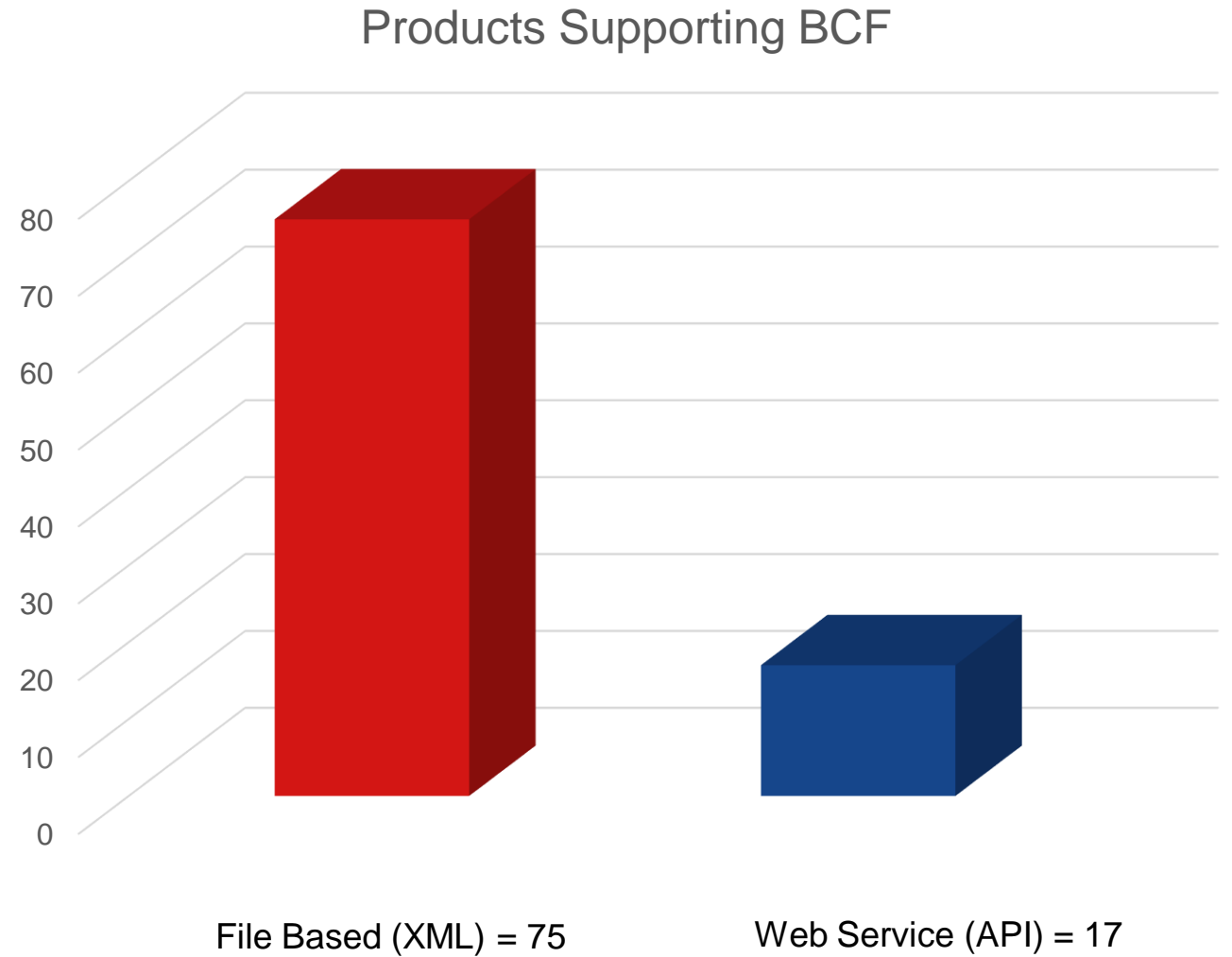
- Open Standard
- Interoperability



Why **BCF**?

Its **Flexible**


- Open Standard
- Interoperability
- Lots of Support



Why **BCF**?

Its **Flexible**

- Open Standard
- Interoperability
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Home Standards ▾ Services ▾ Resources ▾

buildingSMART International Standards Implementation Database

This is a listing of all software products which claim to support buildingSMART International standards, including IFC and BCF.

While the best efforts are put into keeping this list up to date, please feel free to contact us at technical@buildingSMART.org if you see a product missing from this list or the information provided needs updating.

Show entries Search:

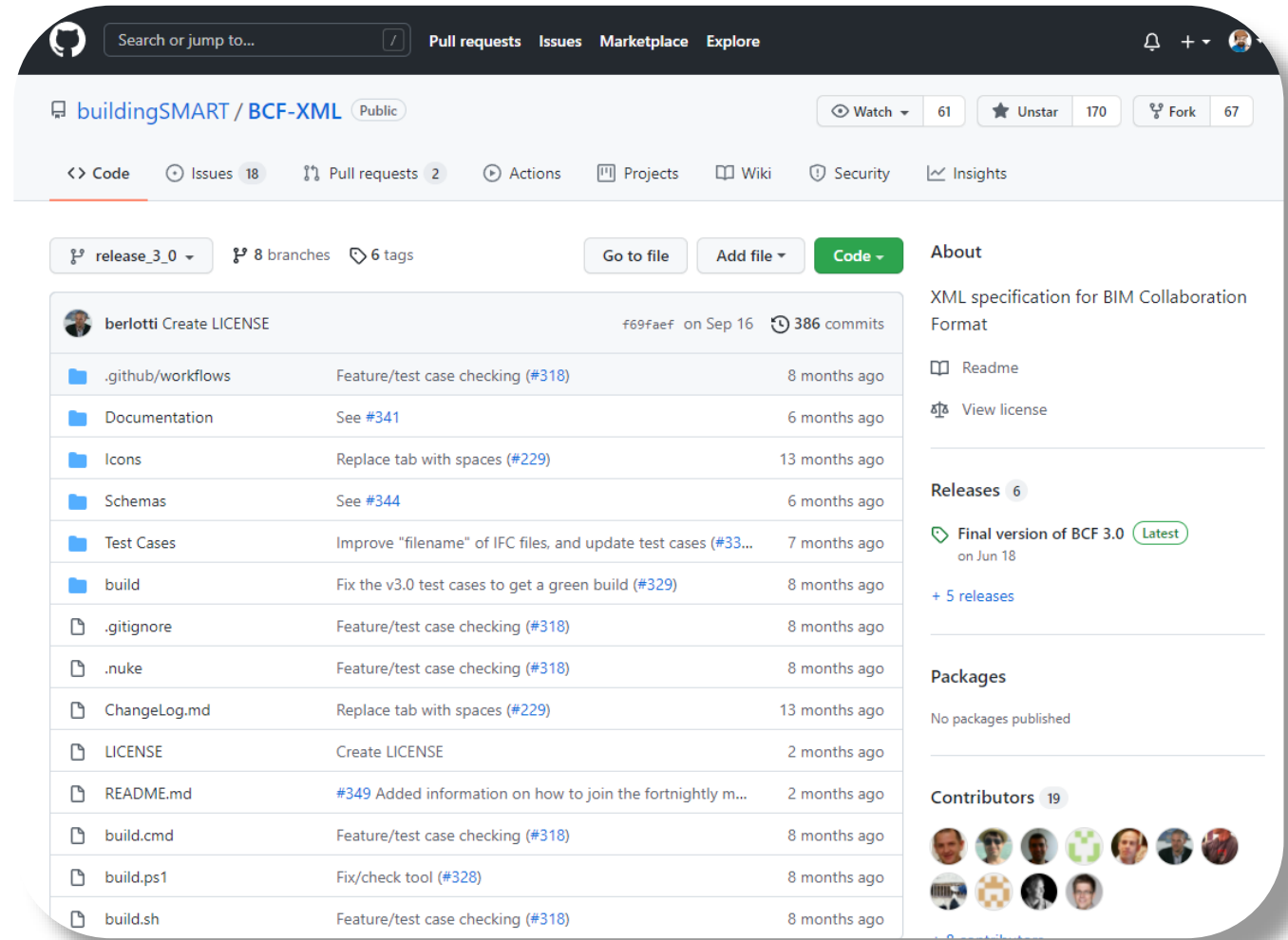
Vendor/Developer	Product	Category	Sub-category	IFC2x3	IFC4	BCF XML	BCF API
*open source (GNU GPL3)	BCFier	BCF client				X	X
Axxone System	AxeoBIM	Data Server	Project Collaboration	X	X	X	X
BIM Track	BIM Track	Model Viewer, Model Analysis	Issue Tracking	X	X	X	X
BIMData.io	BIMData.io API	Development Tools		X	X	X	X
BIMData.io	BIMData.io Platform	Model Viewer, Other		X	X	X	X
Bloc in Bloc, SAS	Bloc in Bloc API	Development Tools		X	X	X	X
Bloc in Bloc, SAS	Bloc in Bloc Platform	Data Server	General	X	X	X	X
Bricks	Bricks	Project Management				X	X
Bricsys NV	BricsCAD BIM	Model Authoring	Architectural	X	X	X	X

[buildingSMART International Standards Implementation Database](#)

Why **BCF**?

Its **Flexible**

- Open Standard
- Interoperability
- Lots of Support
- Options
 - XML



Why **BCF**?

Its **Flexible**

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 - XML

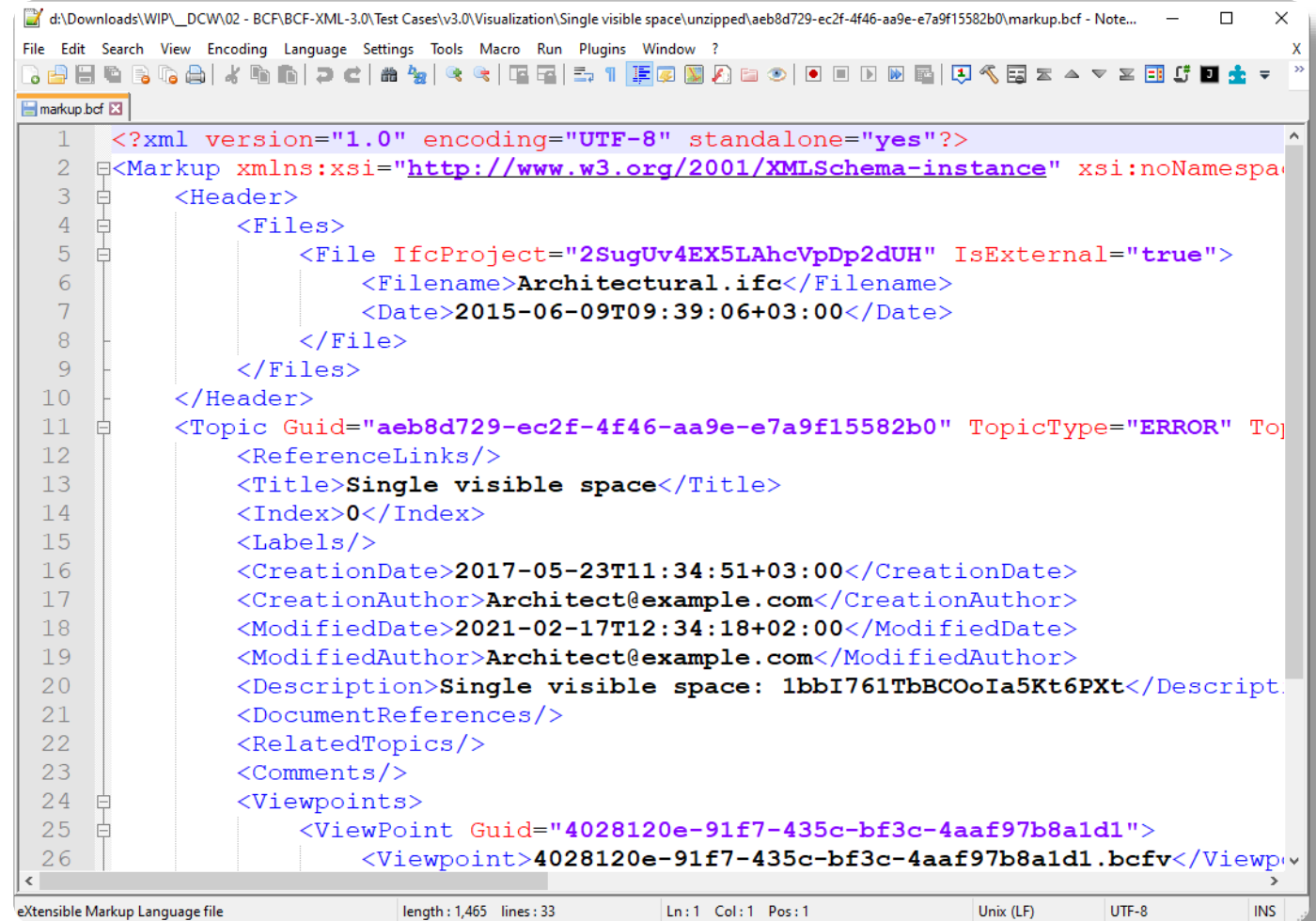
```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<VisualizationInfo Guid="9e913da8-860c-4d48-9d94-cccc2e1d9ca">
  <Components>
    <Selection/>
    <Visibility DefaultVisibility="false">
      <ViewSetupHints SpacesVisible="true" SpaceBoundariesVisible="false" OpeningsVisible="false"/>
      <Exceptions>
        <Component IfcGuid="1XbKhGD91DvhOpYZbhzGTI"/> <!-- Wall -->
        <Component IfcGuid="1bbI761TbBC0oIa5Kt6Pxt"/> <!-- Space -->
      </Exceptions>
    </Visibility>
    <Coloring/>
  </Components>
  <OrthogonalCamera>
    <CameraViewPoint>
      <X>18.674638207107783</X>
      <Y>-19.54805982455614</Y>
      <Z>10.538476791232824</Z>
    </CameraViewPoint>
    <CameraDirection>
      <X>-0.8050867319107056</X>
      <Y>0.5154458284378052</Y>
      <Z>-0.29351478815078735</Z>
    </CameraDirection>
    <CameraUpVector>
      <X>-0.24719256162643433</X>
      <Y>0.15826167166233063</Y>
      <Z>0.9559545516967773</Z>
    </CameraUpVector>
    <ViewToWorldScale>9.673289179801941</ViewToWorldScale>
    <AspectRatio>1.7777777777777777</AspectRatio>
  </OrthogonalCamera>
  <ClippingPlanes/>
</VisualizationInfo>
```


Why **BCF**?

Its **Flexible**

- Open Standard
- Interoperability
- Lots of Support
- Options
 - XML

When working with XMLs **Notepad ++** is your friend!



```
1 <?xml version="1.0" encoding="UTF-8" standalone="yes"?>
2 <Markup xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:noNamespa
3
4   <Header>
5     <Files>
6       <File IfcProject="2SugUv4EX5LAhcVpDp2dUH" IsExternal="true">
7         <Filename>Architectural.ifc</Filename>
8         <Date>2015-06-09T09:39:06+03:00</Date>
9       </File>
10    </Files>
11  </Header>
12  <Topic Guid="aeb8d729-ec2f-4f46-aa9e-e7a9f15582b0" TopicType="ERROR" Top
13    <ReferenceLinks/>
14    <Title>Single visible space</Title>
15    <Index>0</Index>
16    <Labels/>
17    <CreationDate>2017-05-23T11:34:51+03:00</CreationDate>
18    <CreationAuthor>Architect@example.com</CreationAuthor>
19    <ModifiedDate>2021-02-17T12:34:18+02:00</ModifiedDate>
20    <ModifiedAuthor>Architect@example.com</ModifiedAuthor>
21    <Description>Single visible space: 1bbI761TbBCOoIa5Kt6PXt</Descript
22    <DocumentReferences/>
23    <RelatedTopics/>
24    <Comments/>
25    <Viewpoints>
26      <ViewPoint Guid="4028120e-91f7-435c-bf3c-4aaf97b8a1d1">
        <Viewpoint>4028120e-91f7-435c-bf3c-4aaf97b8a1d1.bcfv</Viewpoint>
```

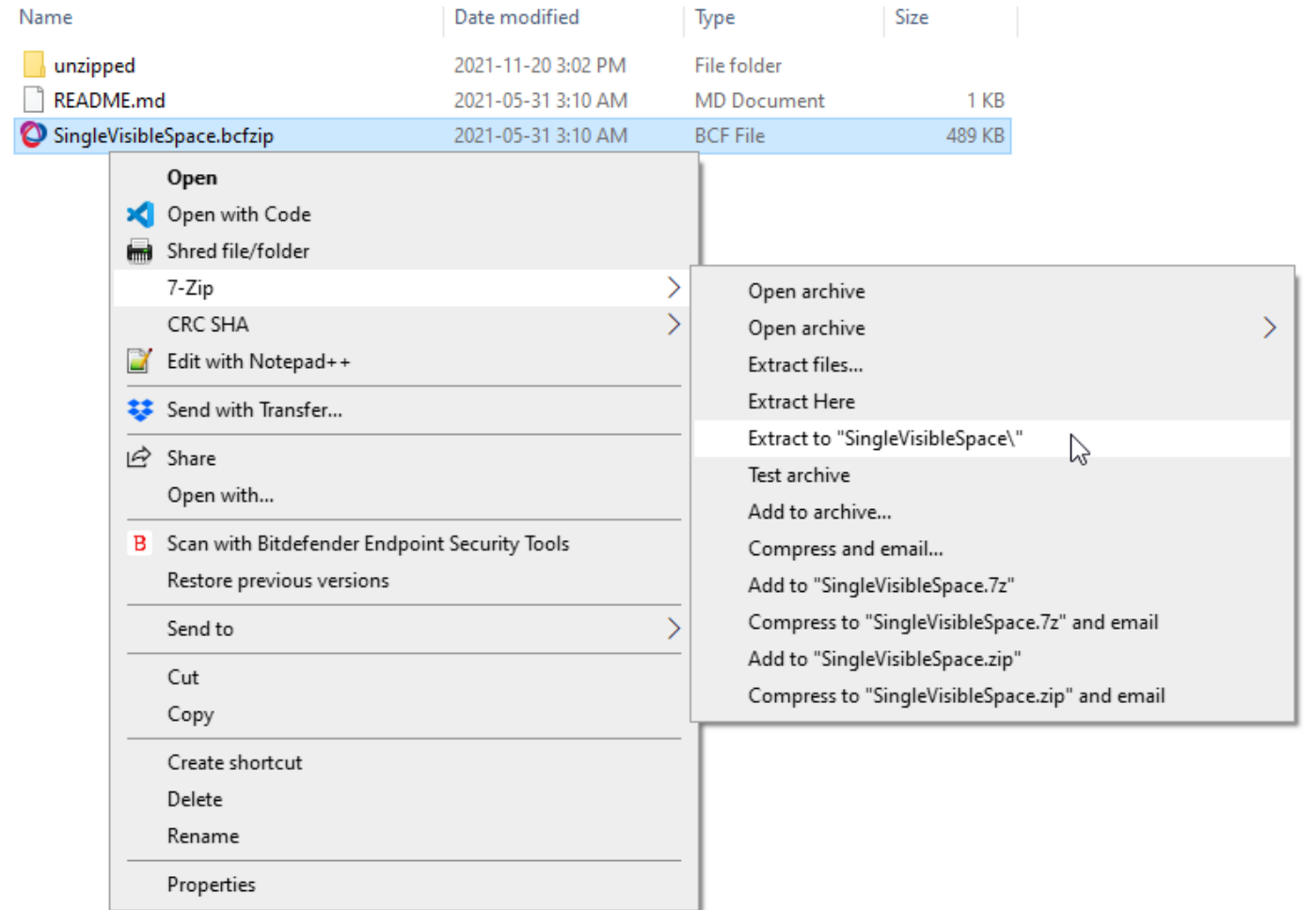
Get Notepad ++ [HERE](#)

Why **BCF**?

Its **Flexible**

- Open Standard
- Interoperability
- Lots of Support
- Options
 - XML

Unzip BCF to open XML –
.bcfzip for BCF2.0 and Earlier

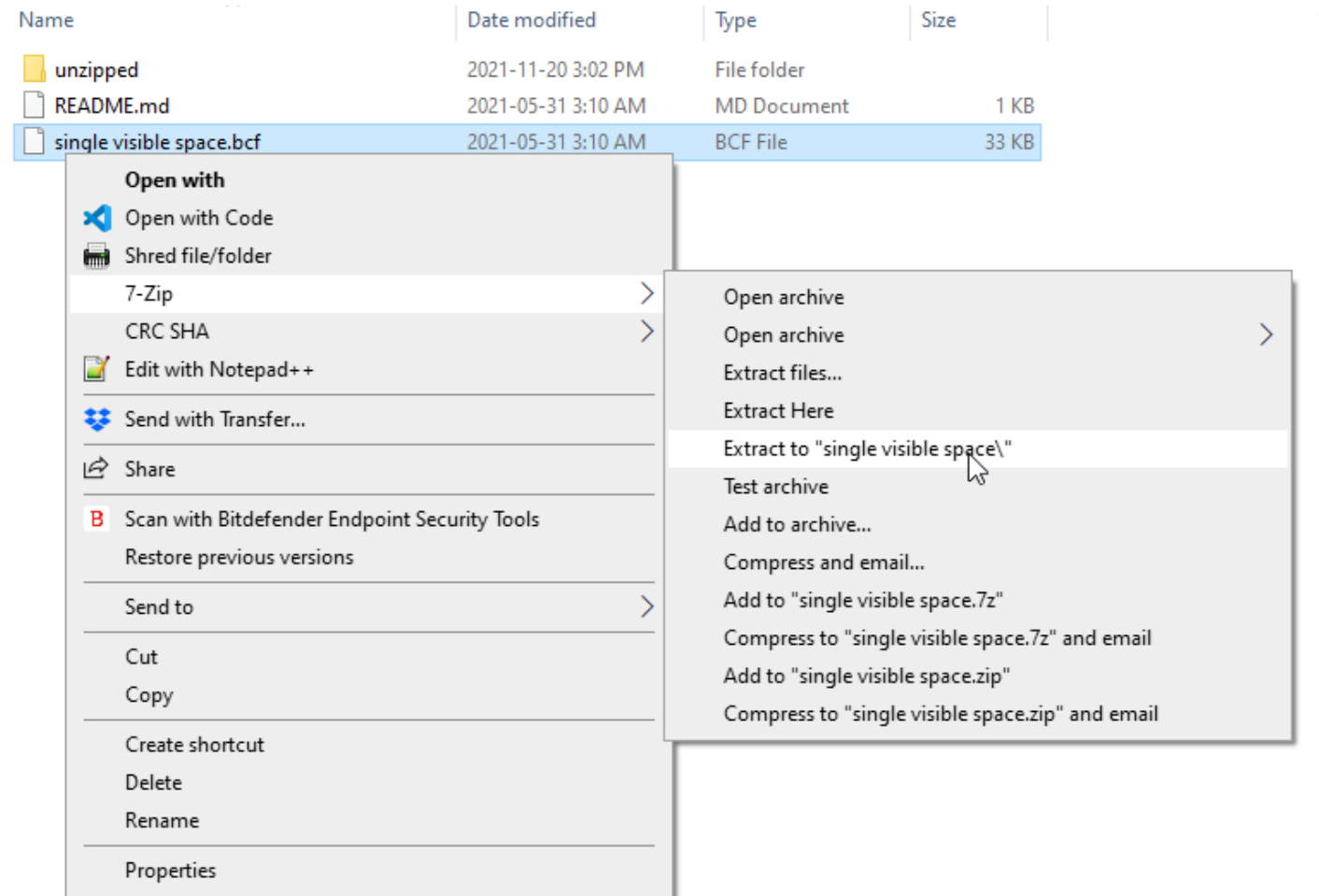


Why **BCF**?

Its **Flexible**

- Open Standard
- Interoperability
- Lots of Support
- Options
 - XML

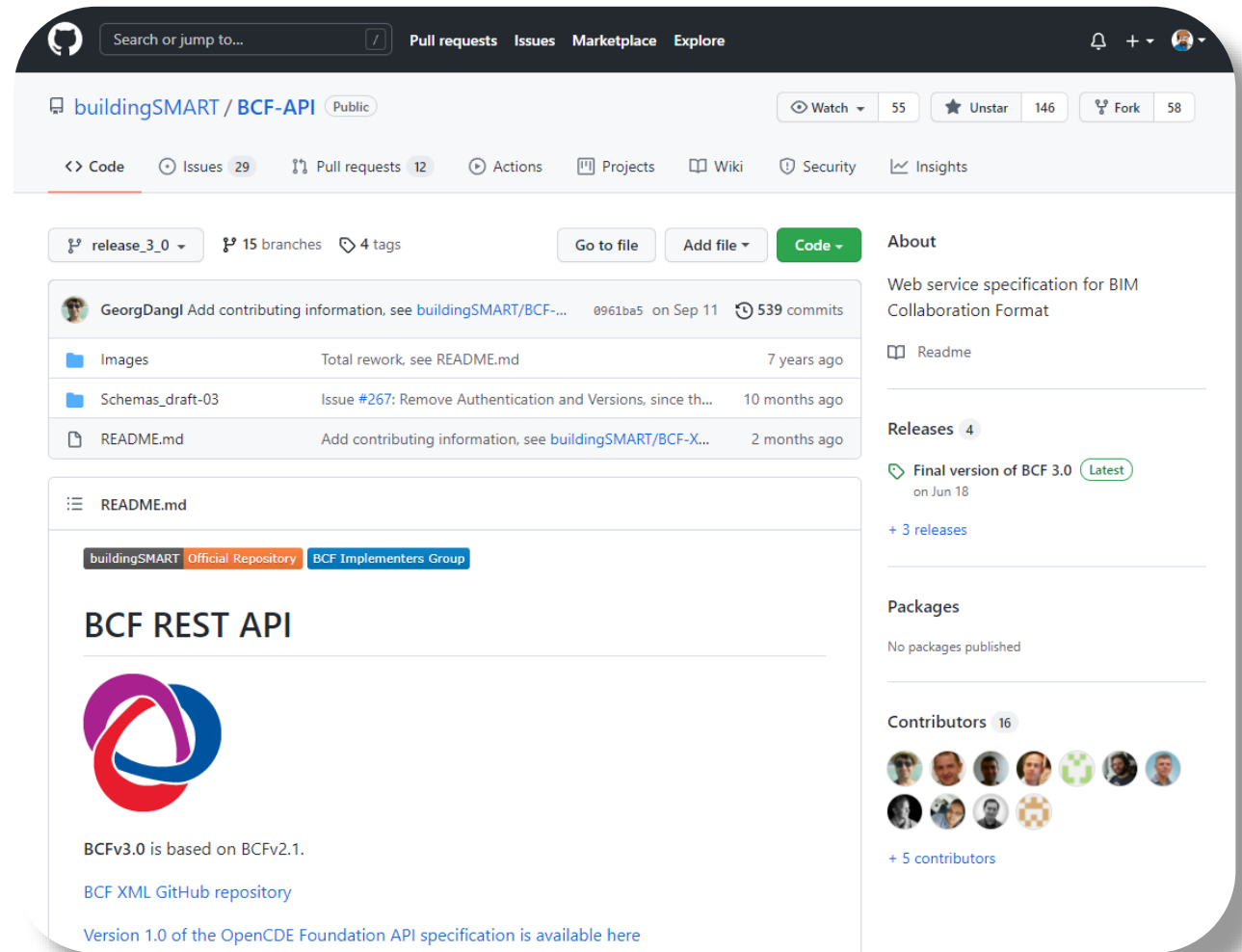
Unzip BCF to open XML –
.bcf for BCF2.1 and Later



Why **BCF**?

Its **Flexible**

- Open Standard
- Interoperability
- Lots of Support
- Options
 - XML
 - API



Why **BCF**?

Its **Flexible**

- Open Standard
- Interoperability
- Lots of Support
- Options
 - XML
 - API

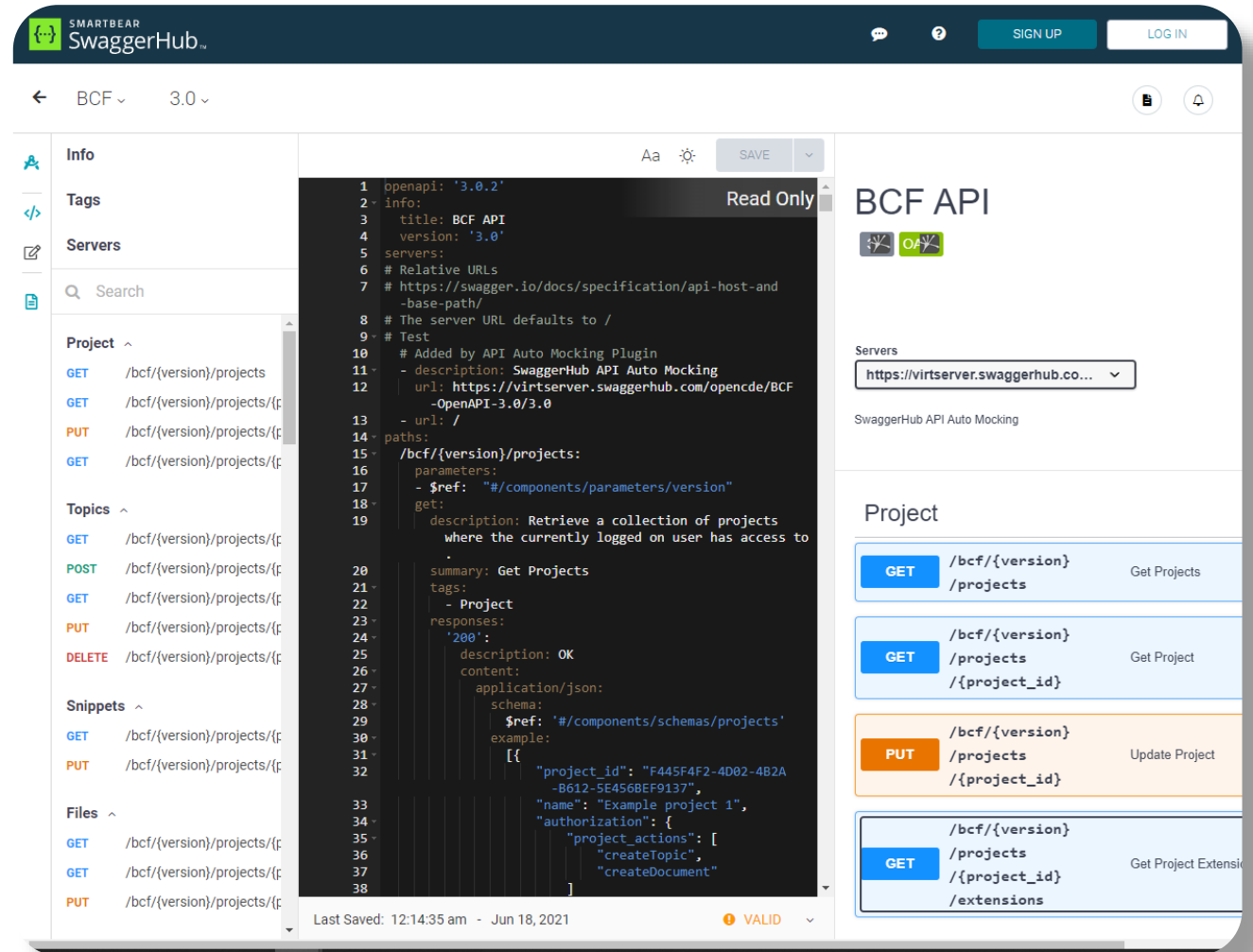
```
Response Code: 200 - OK
Body:
[{"project_id": "F445F4F2-4D02-4B2A-B612-5E456BEF9137",
  "name": "Example project 1",
  "authorization": {
    "project_actions": [
      "createTopic",
      "createDocument"
    ]
  }
}, {"project_id": "A233FBB2-3A3B-EFF4-C123-DE22ABC8414",
  "name": "Example project 2",
  "authorization": {
    "project_actions": []
  }
}]
```

Why **BCF**?

Its **Flexible**

- Open Standard
- Interoperability
- Lots of Support
- Options
 - XML
 - API

When working the BCF API **SwaggerHub** is your friend!

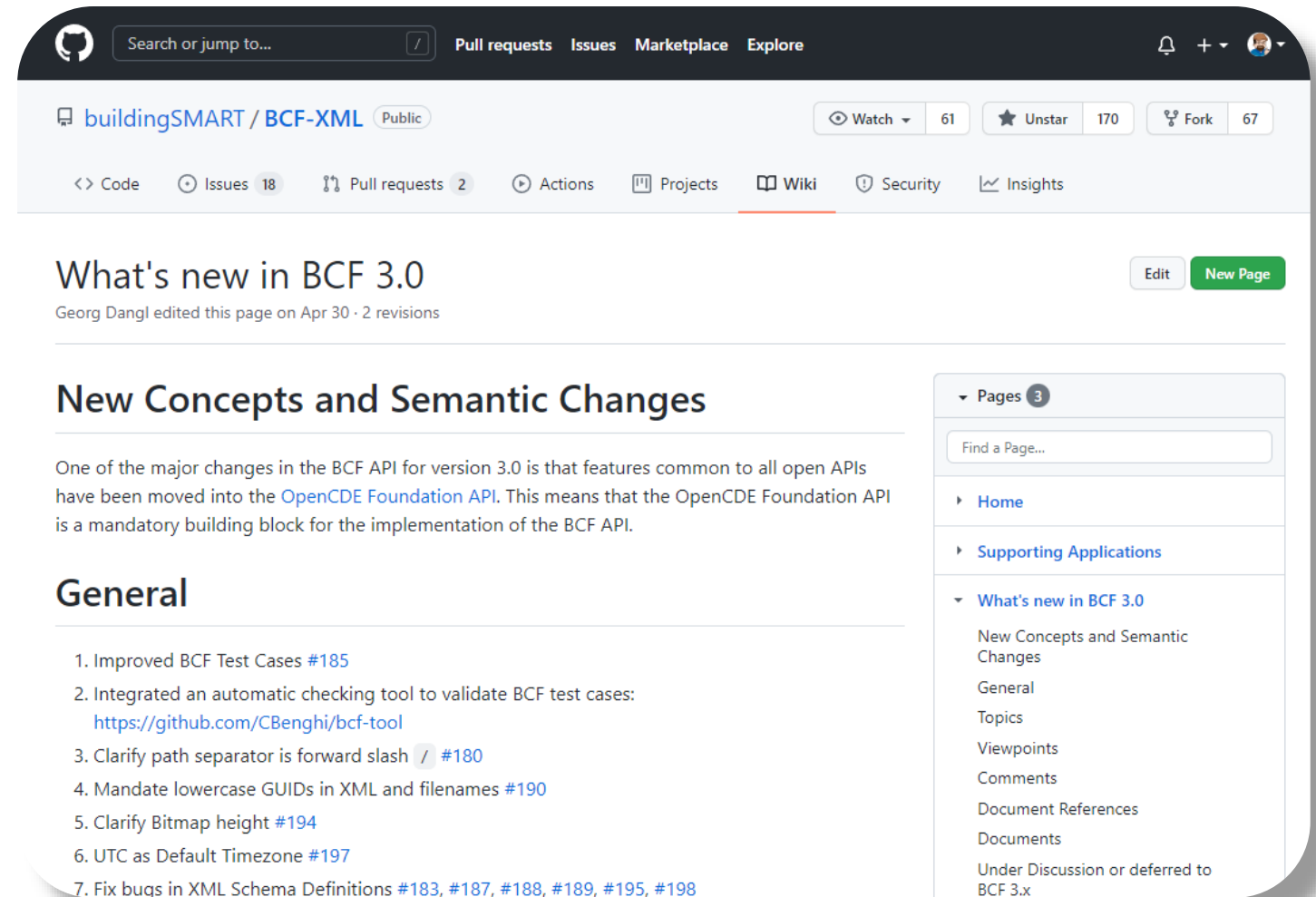


[BCF-API on SwaggerHub](#)

Why **BCF**?

Its **Evolving**

- **BCF 3.0**



The screenshot shows the GitHub repository for buildingSMART / BCF-XML. The page title is "What's new in BCF 3.0" by Georg Dengl, edited on Apr 30. The page content is under the "Wiki" tab and is titled "New Concepts and Semantic Changes". It states that major changes in the BCF API for version 3.0 have been moved into the OpenCDE Foundation API. A "General" section lists seven items: 1. Improved BCF Test Cases #185, 2. Integrated an automatic checking tool to validate BCF test cases: <https://github.com/CBenghi/bcf-tool>, 3. Clarify path separator is forward slash / #180, 4. Mandate lowercase GUIDs in XML and filenames #190, 5. Clarify Bitmap height #194, 6. UTC as Default Timezone #197, and 7. Fix bugs in XML Schema Definitions #183, #187, #188, #189, #195, #198. On the right, a sidebar shows a table of contents for the wiki pages, including Home, Supporting Applications, and What's new in BCF 3.0 (with sub-items: New Concepts and Semantic Changes, General, Topics, Viewpoints, Comments, Document References, Documents, and Under Discussion or deferred to BCF 3.x).

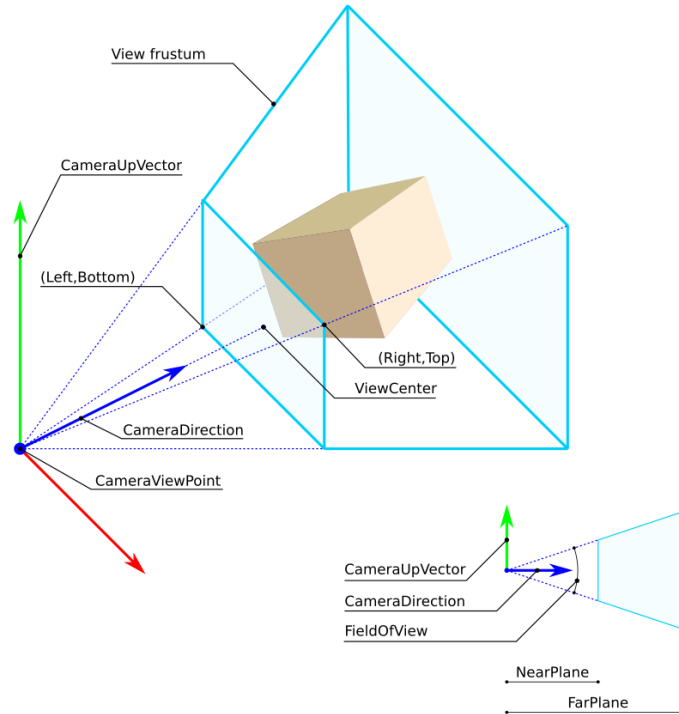
[What's new in BCF 3.0](#)

Why **BCF**?

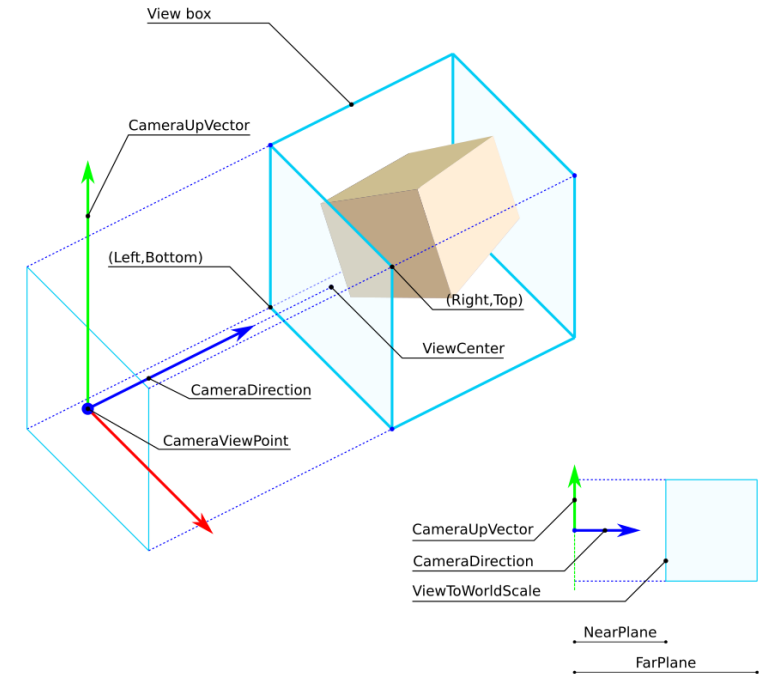
Its **Evolving**

- BCF 3.0
 - Enhance and clarify camera definition

PerspectiveCamera



OrthogonalCamera



[BCF 3.0 Camera](#)

Why **BCF**?

Its **Evolving**

- BCF 3.0
 - Enhance and clarify camera definition
- Foundation API

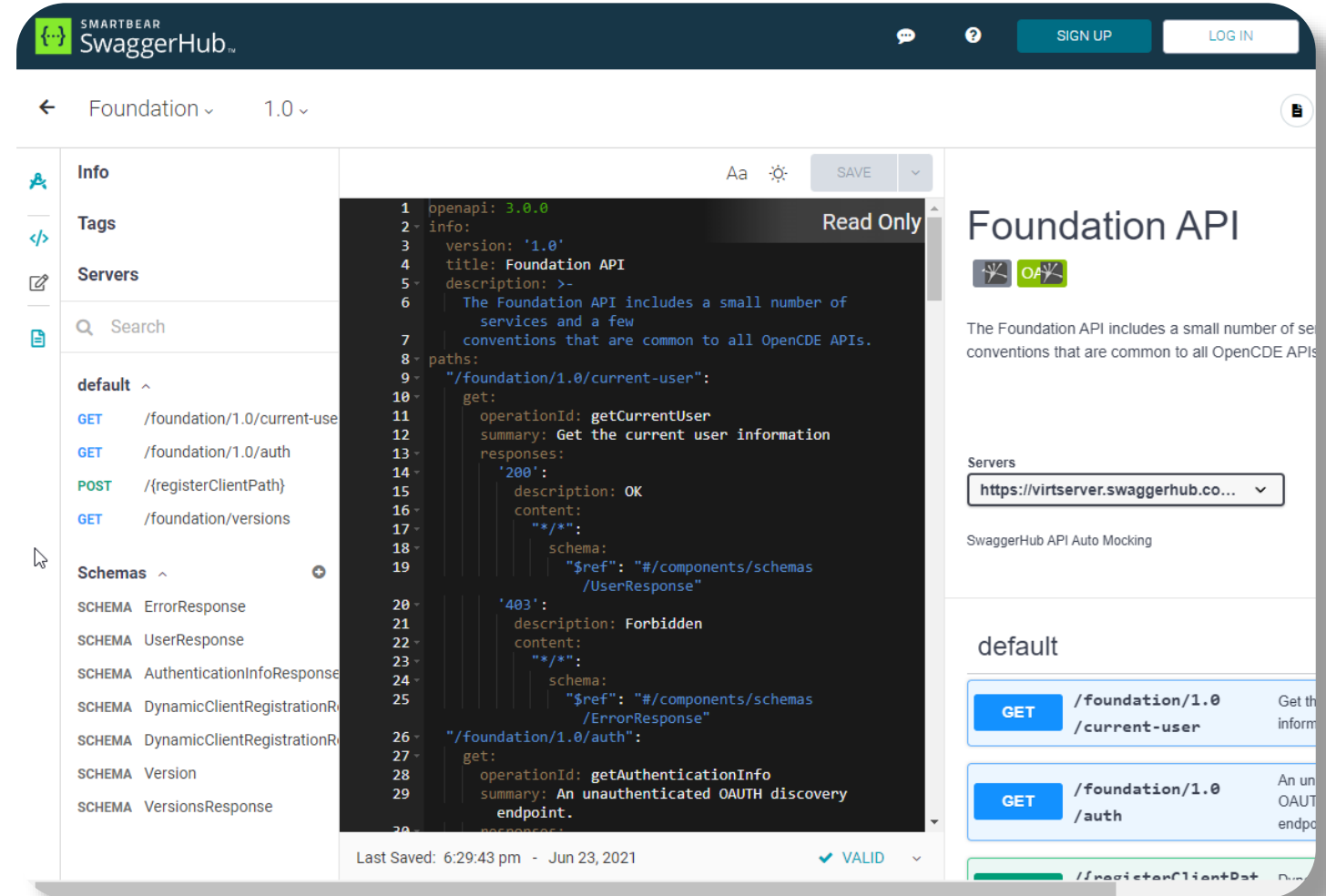


[BCF 3.0 Launch Webinar \(Video\)](#)

Why **BCF**?

Its **Evolving**

- BCF 3.0
 - Enhance and clarify camera definition
- Foundation API



[Foundation API on SwaggerHub](#)

Why **BCF**?

Its Collaborative

- Issue Tracking



Issue Tracking



Drive collaboration at *every project stage*



DESIGN

Design coordination
communications

2D and 3D
Design review



CONSTRUCTION

Clash management

3D Model quality control

Pre-Fabrication coordination
communications

Connecting field
and office



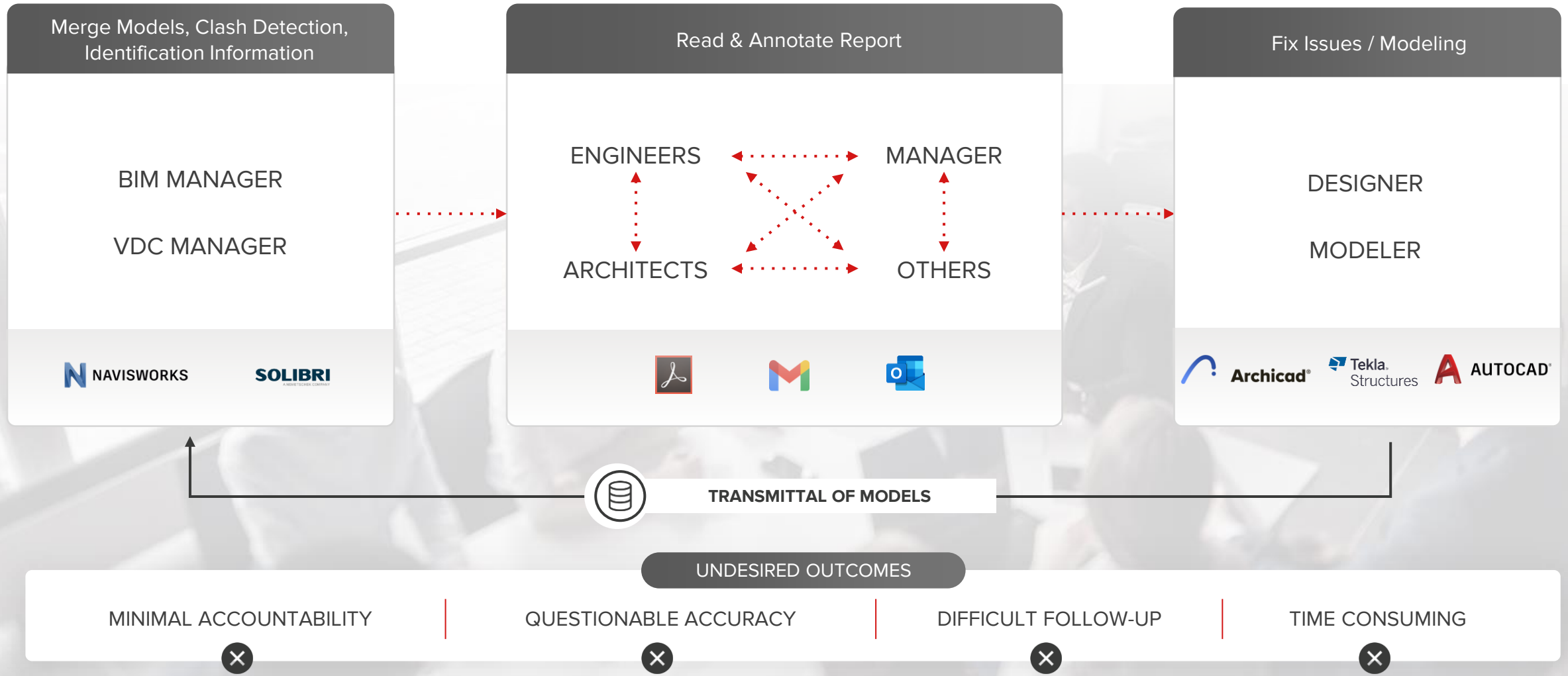
DELIVERY

Site deficiencies
QA/QC

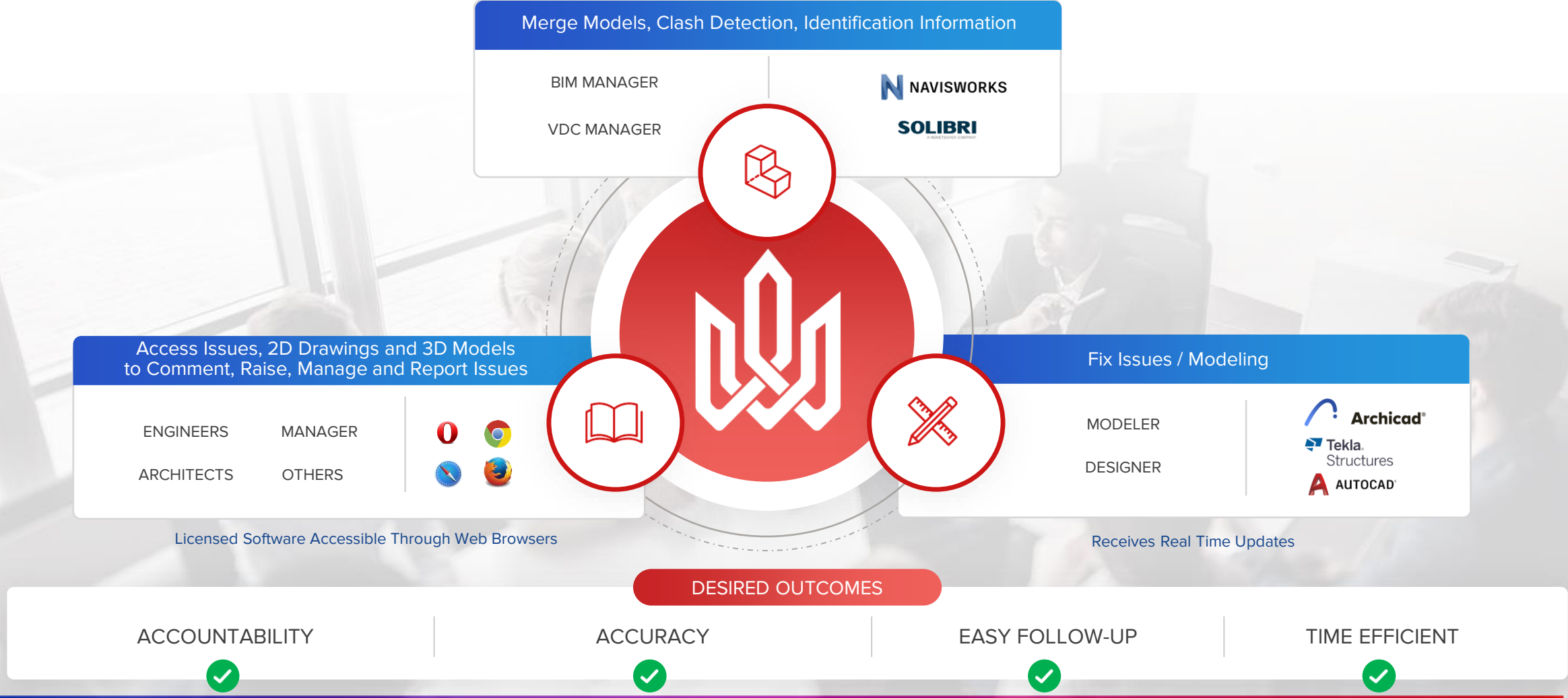
As-built validation

Operations & Maintenance

Communication shouldn't be a challenge



Communication shouldn't be a challenge



Final Thoughts



Final Thoughts

Its **Not** Perfect



Final Thoughts

Its Not Perfect...But

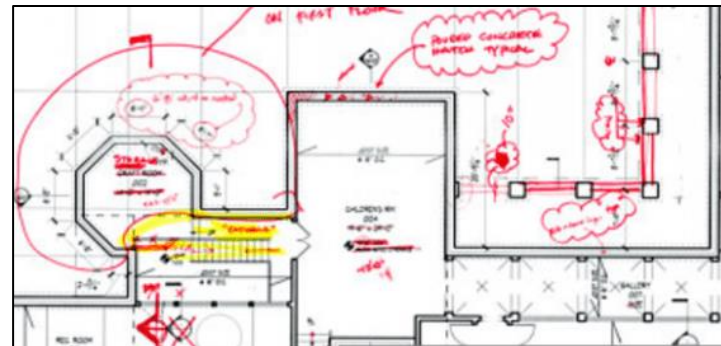
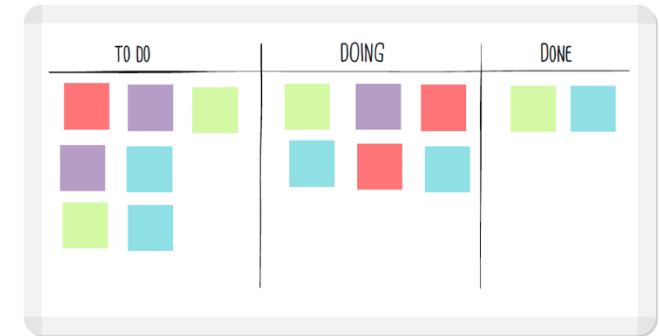
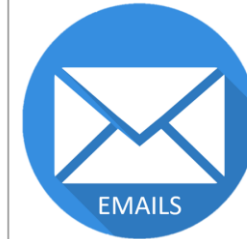
- Always Improving



Final Thoughts

Its Not Perfect...But

- Always Improving
- Much Better Than Alternative



Final Thoughts

Its Not Perfect...But

- Always Improving
- Much Better Than Alternative
- Give it a Try



Final Thoughts

Resources

- [What is BCF – Explainer Video](#) (BIMconnect)
- [BIM Collaboration Format \(BCF\)](#) – buildingSMART
- [BIM Collaboration Format \(BCF\) – An Introduction](#) (buildingSMART)
- [BIM Communication – No Problem with BCF](#) (PDF)

Final Thoughts

Resources

- [BCF 3.0 Launch Webinar](#) (Video)
- [BIM Collaboration Format v3.0 Technical Documentation](#)
- [What's New In BCF. 3.0](#)
- [BCF API 3.0 Swagger Page](#)

Final Thoughts

Resources

- [BCF XML Specification](#) (building SMART GitHub)
- [BCF XML Release Tree](#) (building SMART GitHub)
- [BCF API Specification](#) (building SMART GitHub)
- [BCF API Release Tree](#) (building SMART GitHub)

Final Thoughts

Resources

- [openBIM: Access Everything Collectively, that's interoperability](#) (BIM TrackBlog)
- [3 BCF-based workflows to streamline your BIM coordination](#) (BIM Track Blog)
- [What is a BCF?](#) (BIM Track Blog)
- [Offline issue tracking workflows with BCF](#) (BIM Track Blog)



Questions?



Thank You

Stop by Booth **F70A** and say Hi! 🙋

For More Info

www.bimtrack.co

Start your free trial today!



Carl Storms
Technical Solutions Lead
carl.storms@bimone.com

Presentation 🙋
bimtrack.co/dcw

