

# Autodesk Vault Capabilities and How to Access It

Dan Cacace

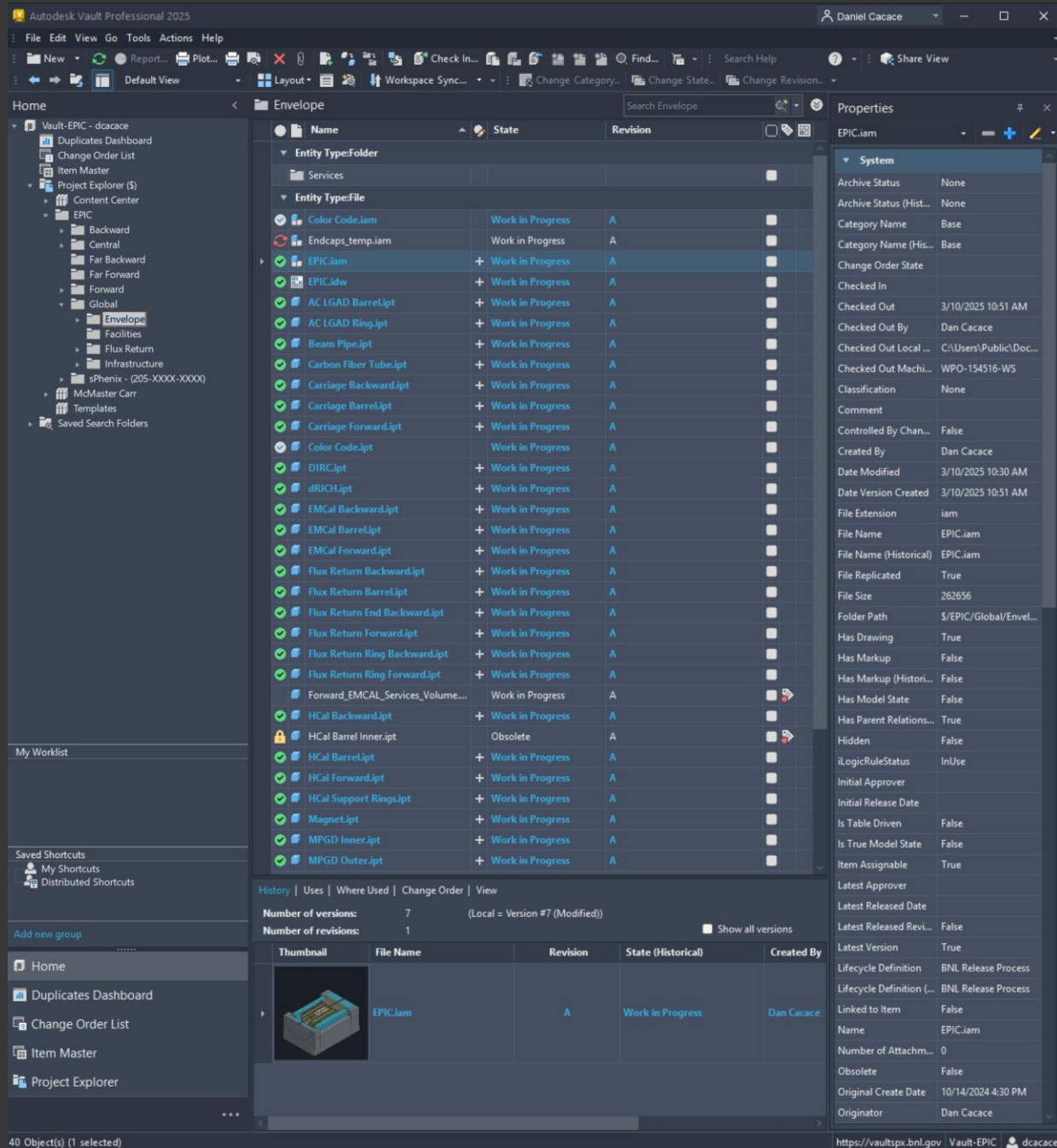
# Outline

- What is Vault?
- Why Use Vault?
  - Features
  - Capabilities
- Compatibility
  - Integration
  - Limitations
- Part Number Scheme
- Release Procedure
- How to get access?
- Q&A



# What is Vault?

- Autodesk Vault is a product data management (PDM) tool designed for engineering/design teams.
- It acts as a centralized repository for managing design and engineering data created in Computer-Aided Design (CAD), but also other applications like Office or any software (file type agnostic).
- Helps teams organize, track, and control all types of project documentation with a directory structure, version control, and lifecycle management.



# Why Use Vault?

## Features

- **User Management:** Groups determine user permissions for adding, editing, etc.
- **File Management:** Consistent folder structure and prevents file overwrites.
- **Collaboration:** Multiple users can work on shared projects with full traceability.
- **Track versions and history:** Every change is documented and reversible.
- **Automated workflows:** Built-in and customizable lifecycle and release processes streamline approval and revision.

## Capabilities

- **Access Control:** Role-based permissions to protect data.
- **Version Control:** Automatically tracks file changes and dependencies.
- **Revision Management:** Control release states and document history.
- **File Relationship Tracking:** Parent/child references between parts, assemblies, drawings and attachments.
- **Powerful Search:** Find data by name, metadata, status, content, etc.
- **Change Order Management:** Built-in ECO workflows to manage design changes.

# Compatibility

## Integration

- Seamless integration with AutoCAD, Inventor, Revit, and other Autodesk software.
- Plug-ins for Microsoft Office for managing documentation.
- Supports any file format.
- Client needed to add or change documents.
- Web based interface for read only access.

## Limitations

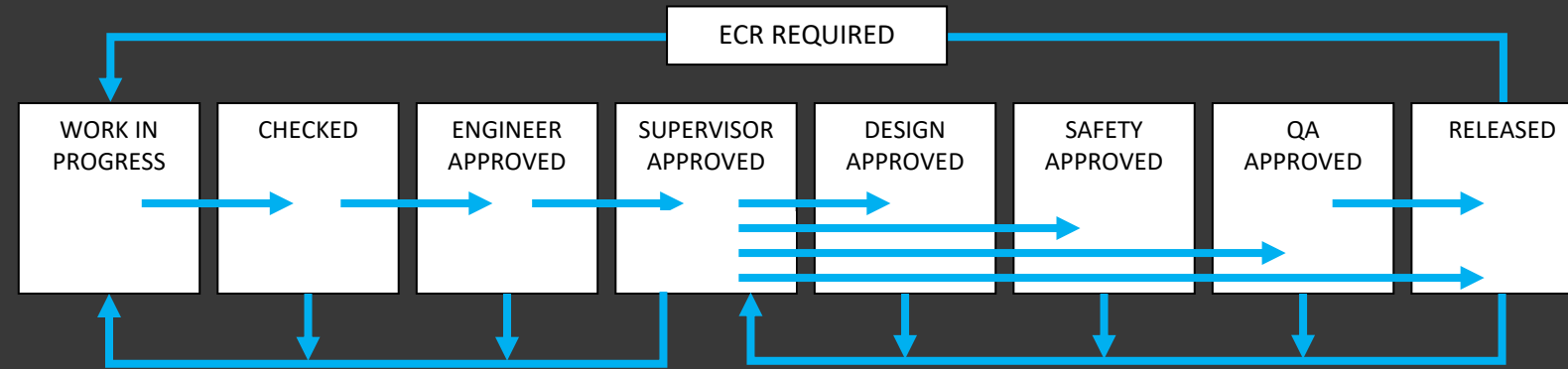
- Dated UI and not particularly user friendly.
- Vault thick client is not macOS or Linux compatible.
- No multi-person editing.
- Requires access to BNL intranet.
- Licenses are required for each person:
  - Vault Pro: \$870 or 3 tokens/day
    - Full capabilities
  - Vault Office: \$215 or 1 tokens/day
    - Non-CAD files only
  - \$300/100 tokens

# Part Number Scheme

Detector	-	-	Component	COM	-
-	EPC	EPIC	-	FAC	Facilities
-	STR	STAR	-	DER	Detector
-	SPX	SPHENIX	-	SRV	Services
Location	LOC	-	-	CAB	Cables
-	GLB	Globe	-	CLG	Cooling
-	CNT	Central	-	GAS	Gas
-	FWD	Forward	-	SUP	Support Structure
-	BWD	Backward	-	FIX	Fixtures
-	FFW	Far Forward	-	PRO	Prototypes
-	FBW	Far Backward	File Type	TYP	-
Subsystem	SUB	-	-	PRT	Part
-	ENV	Envelope	-	ASM	Assembly
-	INF	Infrastructure	-	SRV	Survey
-	FLX	Flux Return	-	DOC	Documentation
-	HCL	HCal	Part	###	-
-	ECL	ECal	-	###	Identifying Number
-	MAG	Magnet	Revision	-	-
-	RCH	RICH	-	RAA	Version AA-ZZ
-	DRC	DIRC			
-	MPG	MPGD			
-	ACL	AC LGAD	EPC-LOC-SUB-COM-TYP-###-RAA		
-	MPG	MPGD			
-	SVT	SVT			

- “Smart” part numbers, not just sequential numbers.
- 5 categories plus identifying number
- Categories use letters for readability
  1. ePIC detector
  2. Location with respect to the IP
  3. Subsystem/subdetector
  4. Type of component
  5. Type of file, CAD, Doc, etc.
  6. Identifying number
  7. Version (for published file types)

# Release Procedure



- Sequentially move from work in progress (WIP) to checked, engineer approved, and supervisor approved.
- If modifications need to be made, it goes back to WIP.
- Depending on the QA category, it is then moved to design, safety and QA in parallel.
- If modifications are needed at this stage, it is bumped back to the supervisor for review, quick change, or WIP.
- Once approved by all, it is then released by the supervisor.
- If modifications are needed after release, the supervisor initiates an ECR, the files need a rev bump and are moved to WIP.

# How to get access – To EPIC CAD Vault

- BNL Guest Registration: <https://guest.bnl.gov/>
  - Cheat sheet provided upon request
- VPN in: <https://www.bnl.gov/cybersecurity/vpn/>
- Form for Vault account: <https://forms.office.com/g/kya8SGQR54>
- Create an Autodesk account: <https://manage.autodesk.com/login?t=/home>
- Once completed, we will provide you with an Autodesk license and a local Vault account
  - No available licenses currently, we need to buy more



# Questions?

Software Tour

# Consider SharePoint for Intermediate Files

- Creating a SharePoint site and use Power Automate
- Similar capabilities as Vault without most of the limitations
- Lifecycles, part numbers, etc. aren't available out-of-the-box
- More complicated customization required, but more powerful
- Similar UI as most Microsoft tools, more modern and familiar
- Browser based interface, so compatible with any OS
- Requires all users have Microsoft accounts, but most likely already have
- No additional per person licenses
- No need for BNL access/VPN