



Agenda

- Introduction to 2020 Cloud
- 2020 Cloud demo
- Authoring Flow
- File based catalog CiC conversion
 - Catalog conversion process
 - Catalog conversion approaches
 - Features and Options basis
 - Add-ons challenges
 - Conditional relations
 - Variable validation
- Pricing
- File based catalog Authoring
 - CiC Authoring tools
 - GSV implementation
- PAF: Platform Acquisition Format – Data model

Challenges with 2020 Design Catalogs

- Manufacturers
 - Efficient Catalog Authoring
 - Maintaining catalogs
 - Distributing Product Content
 - Order Accuracy – 40% of orders using outdated catalogs

Challenges with 2020 Design Catalogs

- Dealers
 - Inconsistencies between catalogs
 - Structure
 - Accuracy
 - Completeness
 - Updating catalogs is painful
 - Manual pricing validation, order validation, order entry processes

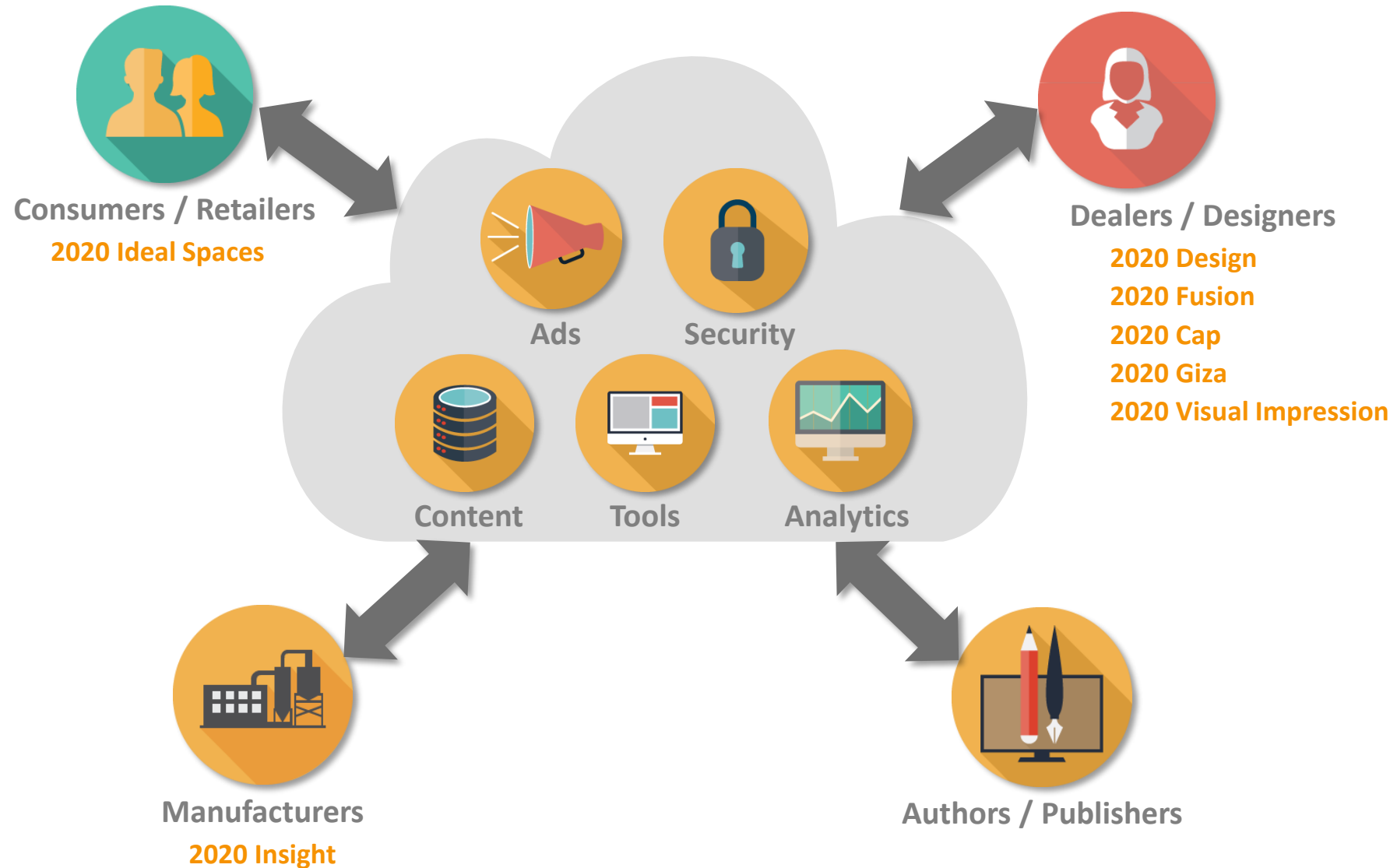
2020 Cloud Solutions



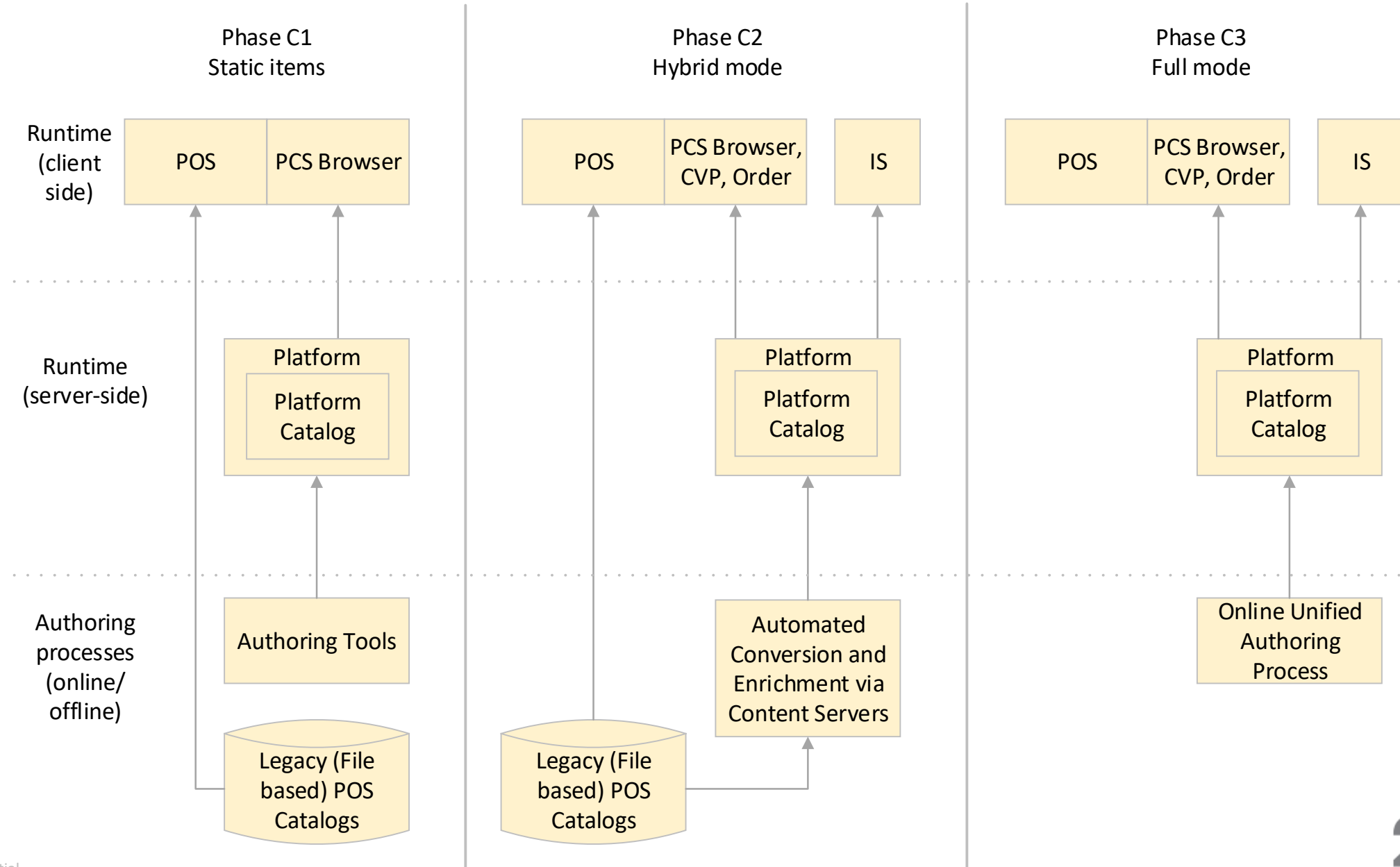
- Update Product Content in Real-Time
- Updated tools permit better control over catalog content, easier distribution of content
- Cleaner catalog data results in cleaner, complete orders
- Features & Options structure permits more consistency between catalogs
- New market insights and analytics permit faster reaction to market feedback

2020 Content in Cloud

Connecting content providers with content users



2020 Cloud phases: First 3 phases



2020-Cloud: 3 Phases

- Phase 1 – **Static products**
 - Infrastructure
 - Platform Content Services (PCS)
 - Manual authoring
- Phase 2 – **Hybrid mode**
 - Configuration, Validation and Pricing (CVP)
 - Selected product ranges
 - Automated conversion of POS file based catalog
- Phase 3 – **Full mode**
 - All product categories
 - Online unified authoring

2020-Cloud Live Demo

Streaming shapes and coverings individually

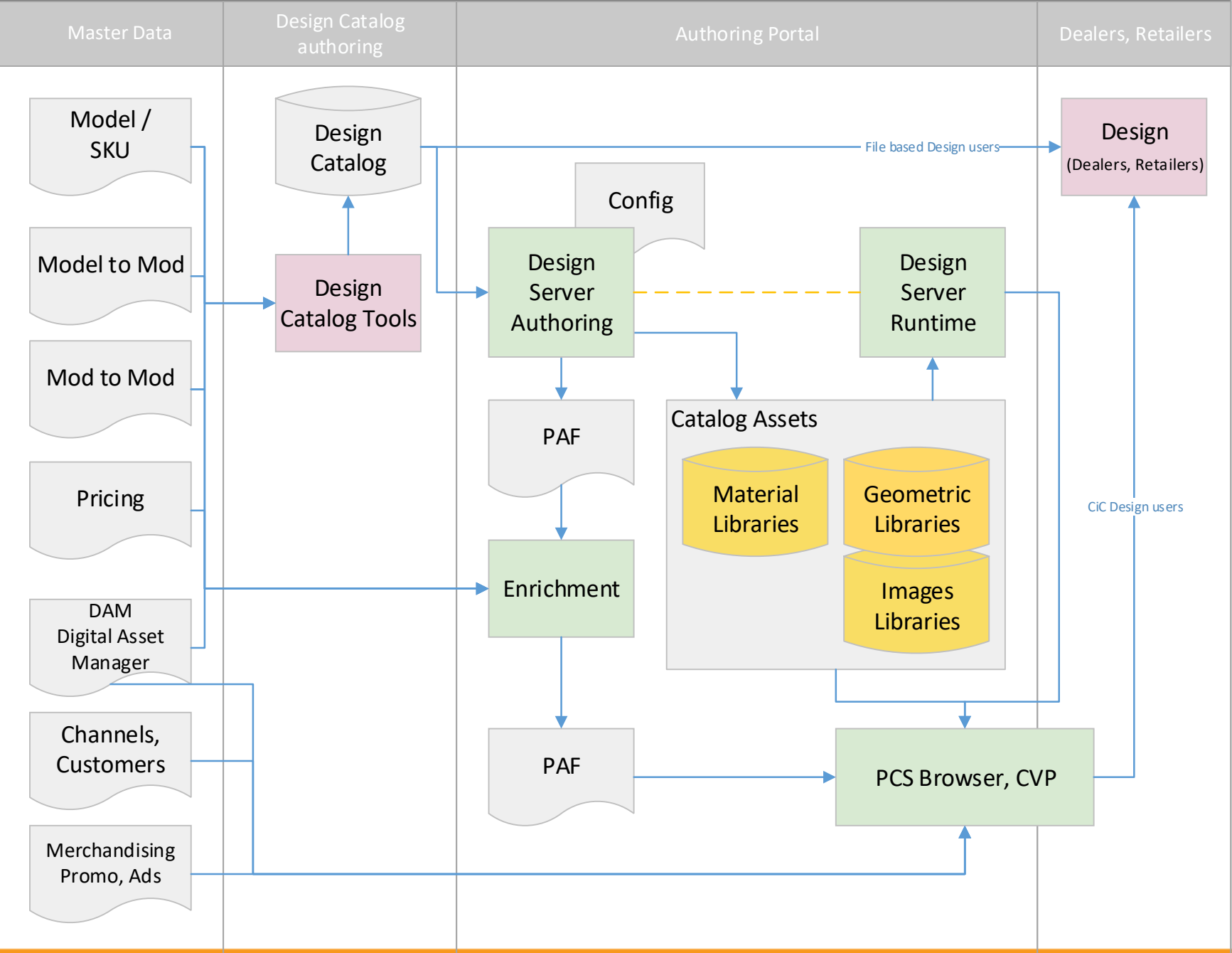


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Cross-Functional Flow – CiC Catalog Authoring / Brand



Content in Cloud authoring flow

- Convert existing 2020 Design catalog
 - Retrieve graphical assets
 - Retrieve 2020 Design specific behaviors (RTC, WCC, Up-Down, etc.)
 - Basic Mod-to-Mod, Model-to-Mod
 - Images from shapes
- CiC catalog enrichment
 - Mod-to-Mod, Model-to-Mod restrictions
 - Pricing
 - Images from DAM
 - Markets (channels, customers)
 - Merchandising, advertisements to CiC

Content in Cloud authoring flow

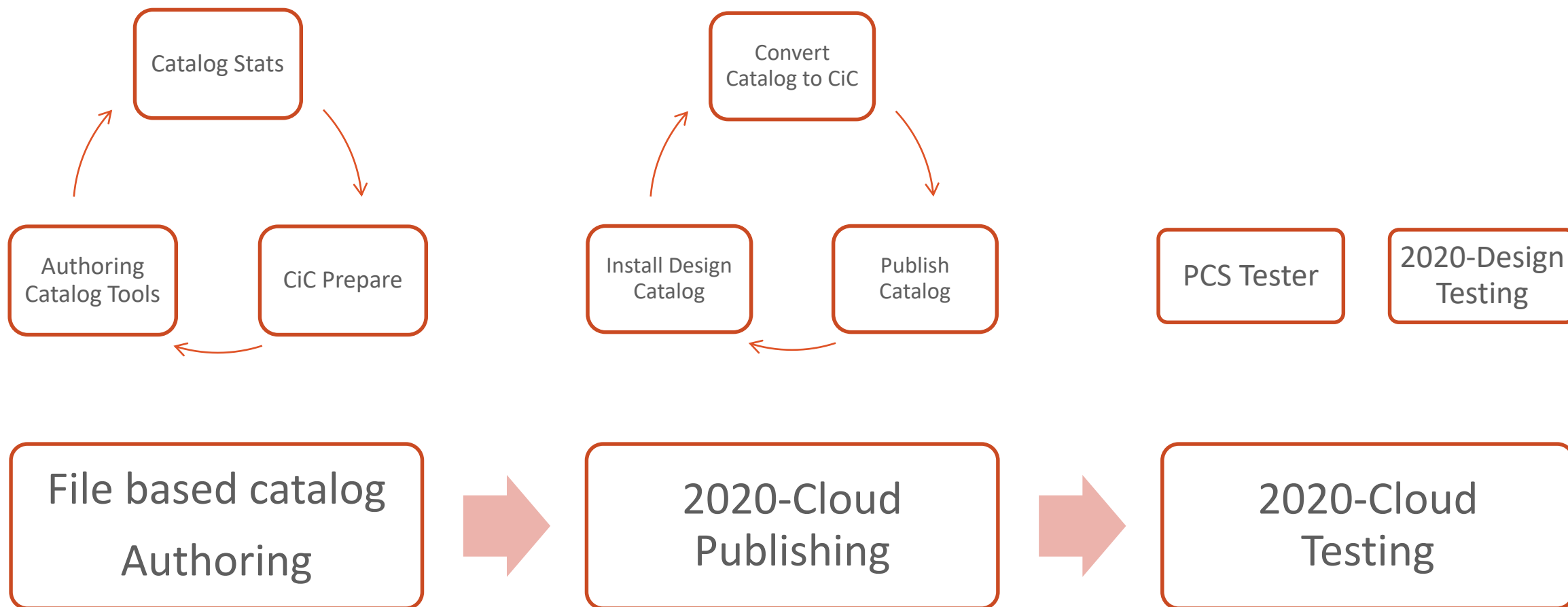
- Conversion configuration
 - Add/Remove variables as features
- Platform Content Services (PCS)
 - Catalog browser
- Configuration, Validation and Pricing (CVP)

Content in Cloud authoring flow

- New thinking on catalog creation/maintenance → 3 activities:
 - Graphical library maintenance
 - Pricing
 - Validation/restrictions
 - Option to option
 - Product to option/feature
- Each activity can be done by different catalog authors.

File based catalog CiC conversion

Catalog Conversion Process



Conversion Approach

Two (2) possible approaches:

1. Basic conversion
2. Full conversion

Basic Conversion Approach

- Same catalog used in 2020 and CiC.
- Advantage: One (1) catalog to maintain.
- Disadvantages:
 - Lots of manual editing after conversion.
 - Restriction validation will reside in 2 areas: file based catalog and PAF files. Will be more difficult to maintain. i.e. relations from design will be converted as is but additional restriction/validation for runtime validation (conditional relations) will have to be maintained in the PAF files.
 - Features & Options might not display in the best possible way, if cannot be modified in the file based catalog. I.e. Variable grouping using caption string.
- Enhance with restrictions feature/options to options.
- Enhance with restrictions products to options.

Full Conversion Approach

- New master catalog specific for CiC
- Advantages:
 - Best user experience possible.
 - Reduce manual editing.
- Disadvantage: Two (2) catalogs to maintain, file based + CiC master.
- Create/Edit master catalog in 2020 cat tools.
 - Derivative from current catalog.
- Organize add-ons to limit manual authoring and not having to split feature to display in CiC.
 - Feature = One (1) option selection
- Commercial data maintenance will be in the PAF files
- Graphical maintenance will be in cat tools.

Features and Options Basis

- Feature Group (FG)
 - Regroups Features
 - Up to three (3) Feature groups
- Feature (F)
 - Regroups Option Groups or Options
- Option Group (OG)
 - Regroups Options
 - Up to three (3) Option Groups
- Options (O)
 - Selection level

Features and Options Basis

Feature = One (1) option selection

- Feature Group

- Feature

- Option Group1

- Options 1

- Options 2

- Option Group2

- Options 3

- Options 4

One possible selection

- Feature

- Options 1

- Options 2

One possible selection

Top features groups

CiC display groups

Attributes for B24

3D Display
Hidden lines (Interactive mode)

General | Add-Ons | **Variables** | Notes

Variable
Depth
Height
Width

Styles & Pricing

Design Charges | **Catalog Styles** | Catalog Charges | Price Levels

DPLUSE01_7

Style	Value
1 Base Door Upcharge	Base Door 502
2 Wall Door Upcharge	Wall Door 509
3 Tall Door Upcharge	Tall Door 509
4 Drawer Upcharge	Drawer Front 509
5 Door Pulls	Knob, 1-1/4" Dia Chrome
6 Drawer Pulls	Knob, 1-1/4" Dia Chrome
7 Wood Premium	Oak Premium %
8 Finish Premium	Stained %

Attributes for B24

3D Display
Hidden lines (Interactive mode)

General | Add-Ons | Variables | Notes

Catalog Name :
DPLUSE01_7

Addon

- ☐ Base Modifications
- ☐ Toe Kick Modifications
- ☐ Base Accessories
- ☐ Add Parts
- ☐ Roll Top Desks

Right Panel:

DPLUSE01 - Design Plus - Frameless...

All Items

B24

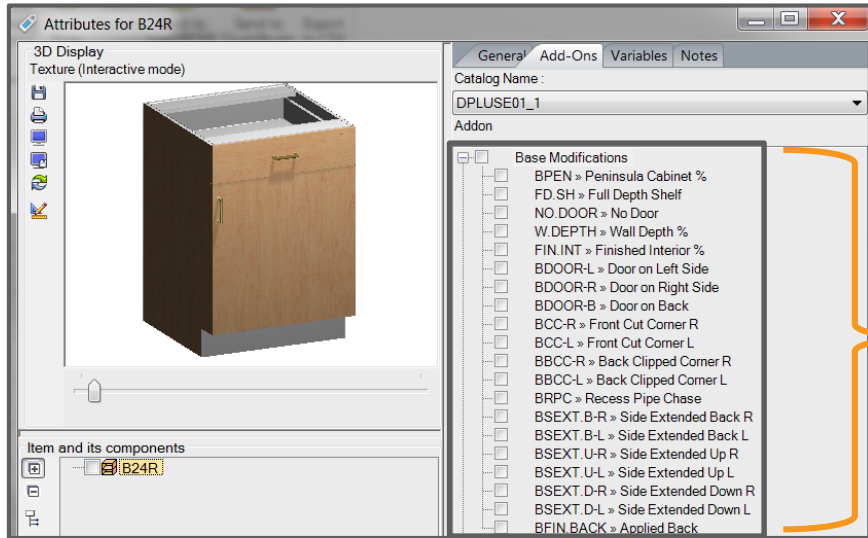
Item Name	Description	Preview
B24	Base Door/Drawer	

Attributes
Styles
AddOns

Challenges with Add-ons/Features

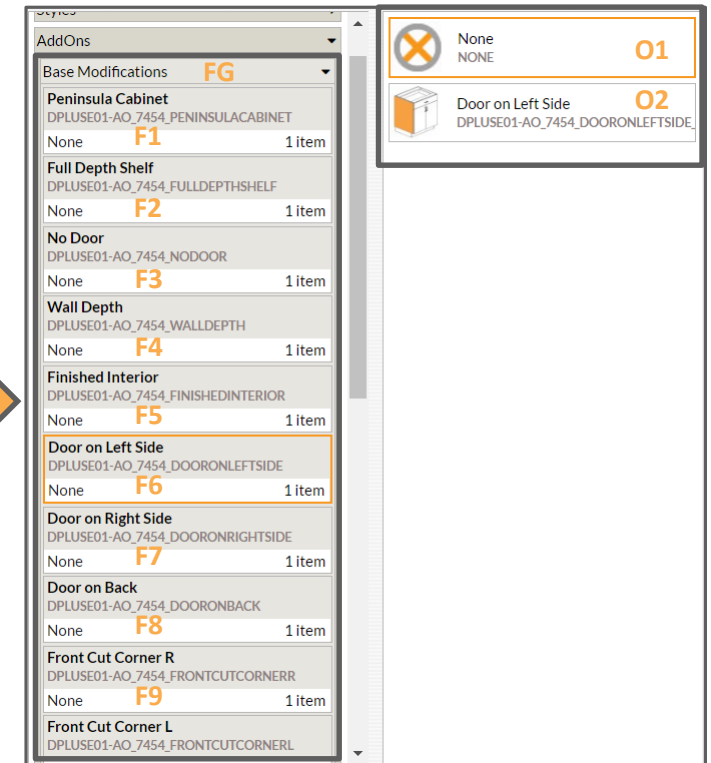
- Challenges with Add-ons/Features
 - The Add-ons structure doesn't follow the 2020-Cloud configuration capability.
 - As a basic rules, the last level in the hierarchy is the Option and its immediate parent is the Feature while parent records are Feature Groups.
 - Features are representing slightly different configuration concepts between 2020 Design and 2020 Cloud → where in 2020-Design it's possible to make multiple selections. For compliance with 2020-Cloud rules, we needed to split these in multiple Features with specific subset of Options.
 - We also have sibling Features that are in fact Option Groups, where it's not possible to allow a selection in both Features. Therefore, they need to be merged in a same Feature and preserve the Options grouping in 2020 Cloud.
 - To better control these conversion preferences, new variables must be defined on Add-ons and Styles & Pricing records.

Multiple selection Split Example

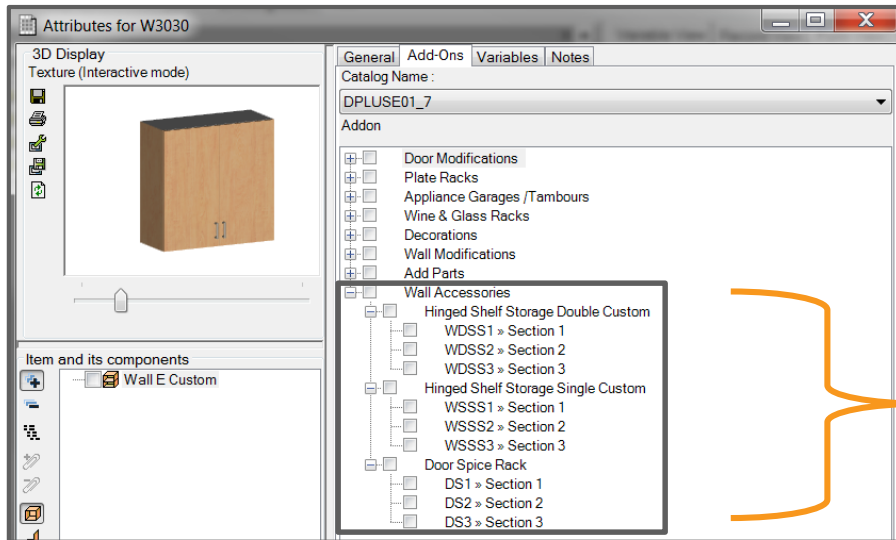


2020 Design: Multiple selections

After conversion
w/new variables

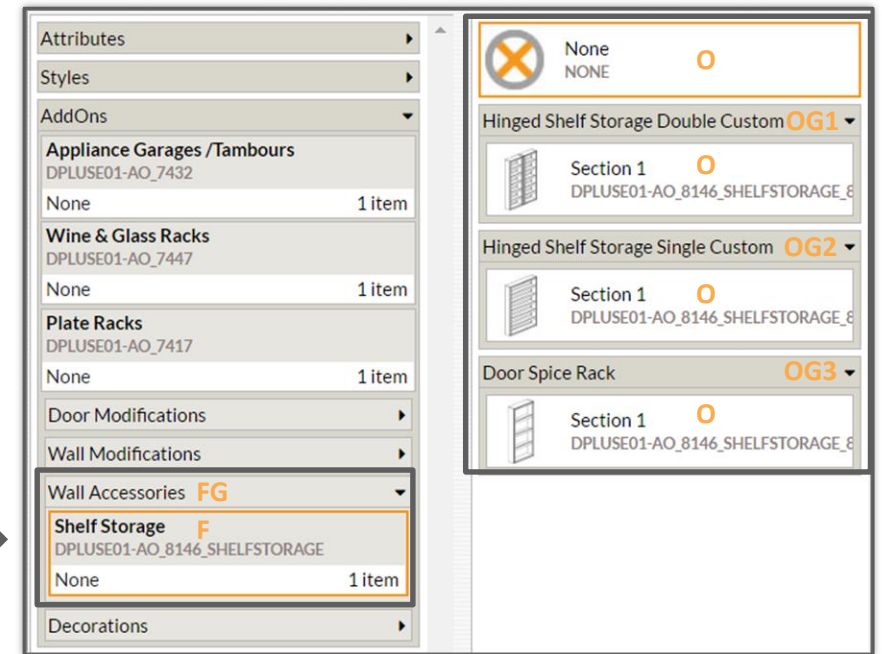


Sibling Features/Options groups example



2020 Design: Three (3) Features

After conversion
w/new variables



Conditional Add-On relations

- Catalog state at conversion.
- Not re-evaluated at runtime.
- Set basic catalog relations in file based catalog.
- Set restrictions in PAF files after conversion.

Numeric Variables and Validations

- Validation Type is Enum
 - The Variable is converted as a Feature where each element of the enumeration becomes an Option.
 - The Option code, description and value are built from the enumeration.
 - The user select an Option.
- Validation Type is Logic
 - The Variable is converted as a Numeric Feature.
 - The user enter in a value with constraints:
 - Min and Max value are set from the validation expression “ $\text{value} \geq \text{MinValue} \ \&\& \ \text{value} \leq \text{MaxValue}$ ”.
 - CiC Prepare simplifies, normalize and propagate the validation expressions.
- No Validation
 - The Variable is converted as a Numeric Feature.
 - The user enter a value with constraints:
 - Min value is one of MinWidth, MinHeight or MinDepth variables.
 - Max value is one of MaxWidth, MaxHeight or MaxDepth variables.

Pricing

Pricing

- Not limited to the 99 price levels
- More flexibility for pricing:
 - Fixed price
 - Combination of fixed prices: fixed price + fixed price
 - Percentage applied to fixed price: fixed price + %
 - (A total of fixed prices + %) + %

Rules based pricing

Wood	Cherry			Maple			Oak		
Door	Atlanta	Boston	Chicago	Atlanta	Boston	Chicago	Atlanta	Boston	Chicago
B15	400.00	360.00	440.00	340.00	305.00	375.00	425.00	380.00	470.00
B18	415.00	375.00	455.00	355.00	320.00	390.00	445.00	400.00	490.00
B21	430.00	385.00	475.00	370.00	335.00	410.00	460.00	415.00	510.00
B24	445.00	400.00	490.00	385.00	345.00	425.00	480.00	435.00	530.00
B30	460.00	415.00	505.00	400.00	360.00	440.00	500.00	450.00	550.00
B33	475.00	430.00	525.00	415.00	375.00	455.00	520.00	465.00	570.00
B36	490.00	440.00	540.00	430.00	390.00	475.00	540.00	485.00	590.00

3D Matrix

	Cherry	Maple	Oak
Charcoal	5%	5%	10%
Fireside	8%	8%	15%
Harvest	10%	10%	20%
Natural	3%	3%	5%
Unfinished	0%	0%	0%

2D Matrix

SKU based pricing (Related Products)

Product (Model)	B15-L	Option State						
	Related Product (SKU)	Feature1	Option1	Feature2	Option2	Feature3	Option3	Price
	B15-ALD-BRA-BAL	Wood specie	Alder	Door Style	Bradford	Finish	Baltic	335
	B15-ALD-BRA-NAT	Wood specie	Alder	Door Style	Bradford	Finish	Natural	320
	B15-ALD-LYN-BAL	Wood specie	Alder	Door Style	Lyndale	Finish	Baltic	325
	B15-ALD-LYN-NAT	Wood specie	Alder	Door Style	Lyndale	Finish	Natural	310
	B15-MPL-BRA-BAL	Wood specie	Maple	Door Style	Bradford	Finish	Baltic	295
	B15-MPL-BRA-NAT	Wood specie	Maple	Door Style	Bradford	Finish	Natural	270
	B15-MPL-LYN-BAL	Wood specie	Maple	Door Style	Lyndale	Finish	Baltic	285
	B15-MPL-LYN-NAT	Wood specie	Maple	Door Style	Lyndale	Finish	Natural	260

File based catalog Authoring

CiC Authoring tools

- Authoring Partners will have access to:
 - Tools to convert Design catalogs to CiC
 - Documentation
 - Hands-on training sessions

CatalogStats tool

- Catalog Stats is a tool that validates specific information needed for conversion as well as statistics on catalog data.
- The tool generates a Stats summary file for guidance on required corrections.
 - Typical information found:
 - Undefined User Code List
 - Undefined Root-Class List
 - Mismatched WCC / RTC AlignType / Display Settings List
 - Etc.

CiCPrepare tool

- CiCPrepare is a tool that automatically generates required information for conversion.
- Such as Itemtypes, Mcodes and F&O Variables.
 - Mcode
 - Physical property of a material.
 - Reflects the material type and consists of a text string concatenating four parameters;
 - Group.Type.Finish.Coating
 - i.e.: Wood.Hard.SandedFine.Satin
 - The Coating usually has the biggest impact on the rendering unless Coating doesn't apply to the specific material. See below examples of Coating for the above MCode for wood;
 - None, Glazed, Glossy, Matte, Oiled, Satin, SemiGloss, Wax
 - ItemType
 - Item types essentially specify Room Type (I.e. Kitchen, Bathroom), Item category (I.e. Cabinet, Panel), Style (I.e. DrawerDoor, FullDoor), and Function(s) (I.e. ForSink, ForCooktop).
 - CiC Rectype (new variable)
 - Identifies which type records will be in CiC (Feature Group, Feature, Option Group, Option)
 - To specify on add-ons and Styles & Pricing records

CiCPrepare tool

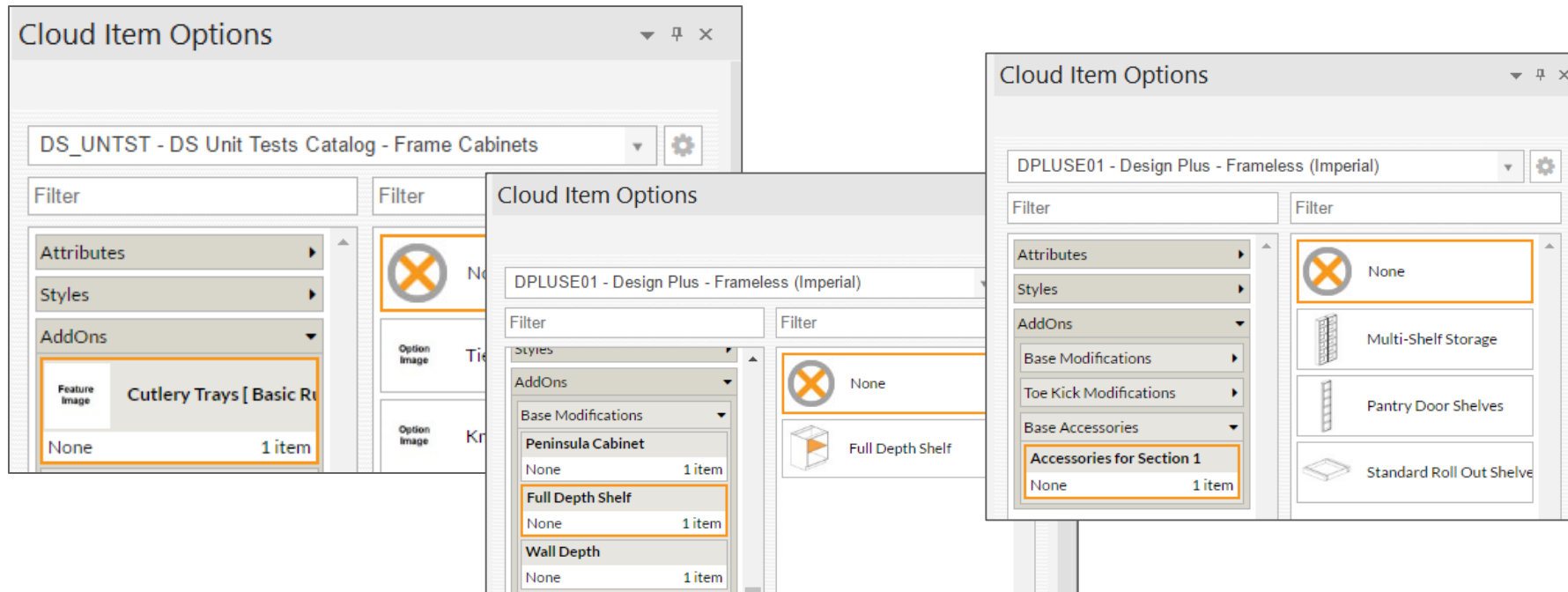
- F&O Variables (Add-ons CiC-RecType variables)
 - CiCPrepare will automatically generate **CiC_RecType** & **CiC_FeatureSplit** variables.
 - May not be possible for some add-ons to display properly with the F&O Variables only.
 - Modify the 2020 catalog hierarchy
 - Enhance with validation/restrictions in CiC.

GSV

- GSV is recommended for conversion
 - Benefit: Validation will be converted to CiC and will reduce manual authoring in CiC.
- GSV can be created as currently in 2020 Design

CiC Images

- In CiC an image can be displayed for items, Feature Groups, Features, Option Groups and Options in the catalog.



PAF

Product Acquisition Format - Data model

Product Acquisition Format

- Coherent with the platform functionality
 - Manufacturer/Retailer exports are transformed into PAF for import
 - An XML format that represents all product configuration concepts required by 2020 applications and supported by our platform
- Used as the main acquisition format
 - Sometimes used as an exchange format
 - Primarily contains commercial information and graphic references
 - Scalable, allowing improvements while supporting existing PAF exports
- Tools
 - Authoring portal
 - Import / Export
 - Integrity validation
 - Conversion from **xls**, **xlsx** and **csv** files to **xml**
 - Conversion from **xml** to **csv** files

PAF – Data model

- Products
 - Products , Features and Options
- Configuration
 - Product to Features/Options
- Validation
 - Option subsets and Restrictions
- Price rules
 - Matrices and Related (SKU) Products
- Presentation
 - Feature and Option grouping
 - Table of content (product menu)
- Multi Languages
- Multi Price Lists
- Active, Effective and Inactive dates
- Features
 - Numeric Features (Increment , Min, Max and Default values)
 - Optional / Mandatory Features
 - Default Option
- Product Packaging