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Capital Device Modeler Overview

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Where do the Device Engineers Reside?

Current ICDs flow

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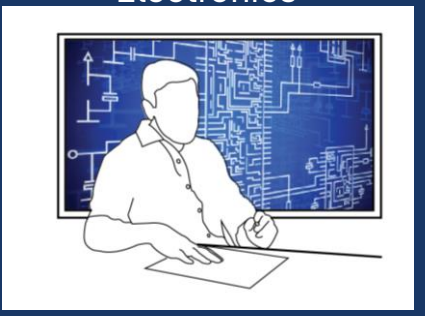
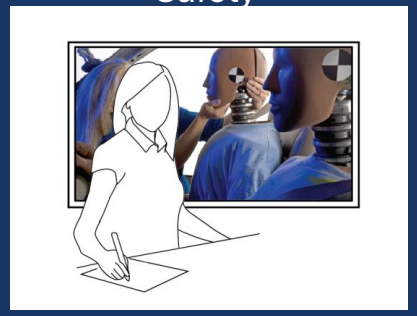
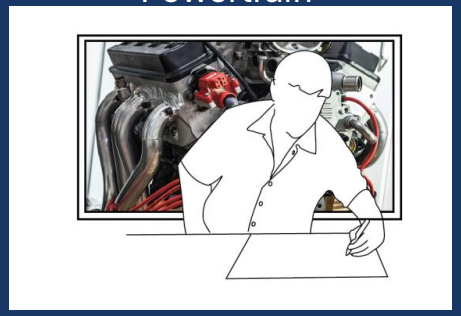
Electronics



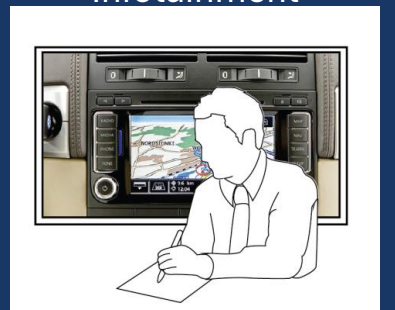
Safety



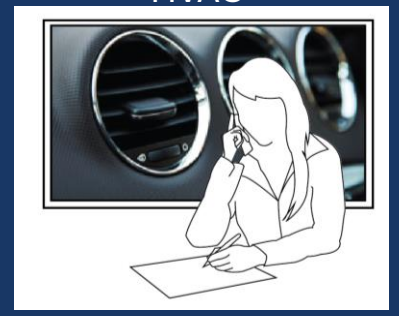
Powertrain



Infotainment



HVAC



Problems with Today's Interface Definition (ICDs)

- Companies need ICDs to support the electrical flow
- Rely on dumb documents (paper/PDF/Excel) which are poorly release-managed
- ICD data does not transfer to downstream tools and lacks traceability across the design flow
- All downstream verification / validation to the requirement source information is manual
- ICD author has no access to parts library & related system schematics to aid ICD creation

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Capital Device Modeler
Single Source of Truth for Electrical Device Data

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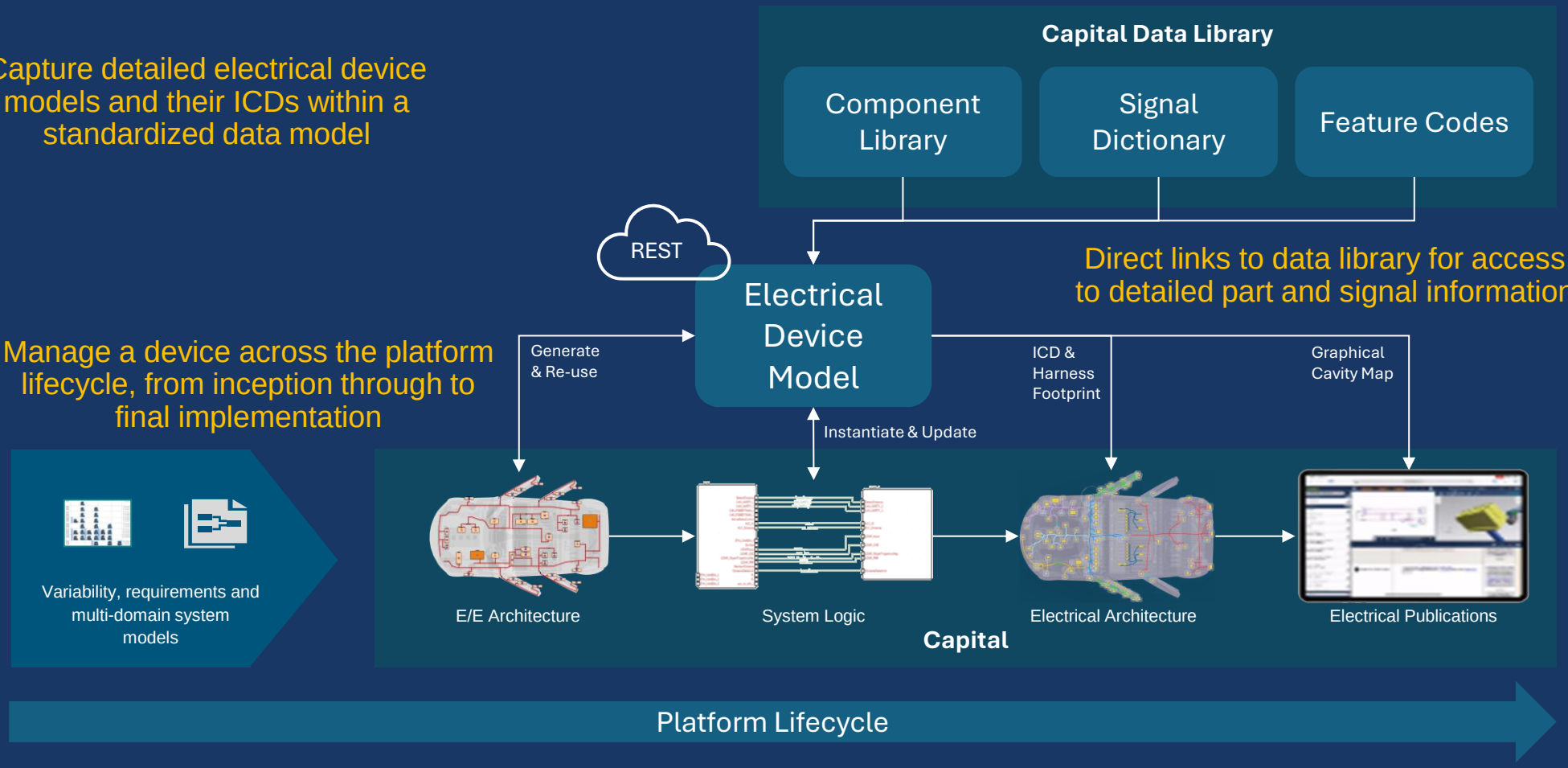
Capture detailed electrical device models and their ICDs within a standardized data model

Manage a device across the platform lifecycle, from inception through to final implementation



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Device Management in Capital Systems
Integrating and managing electrical carryover

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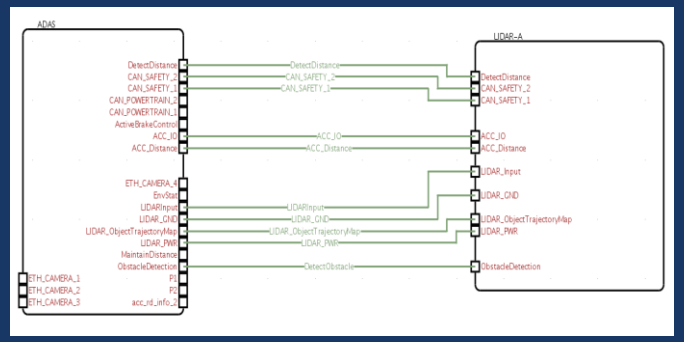
Capital Device Modeler

Import ICDs into Functional Design for Re-Use

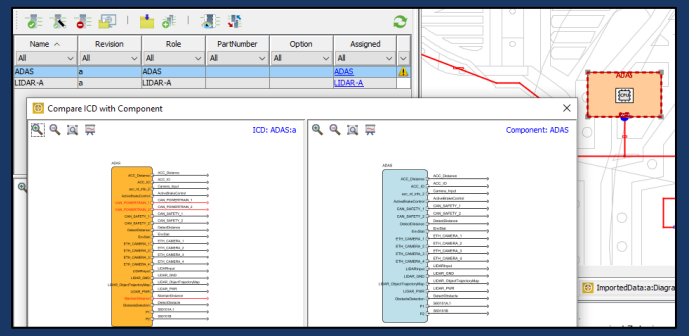


Common Tasks

- Integrate with Other Functions/ICDs
- Decompose into Functions & Signals

Allocate Functions to Components

Manage Devices & ICDs in Capital Systems Architect

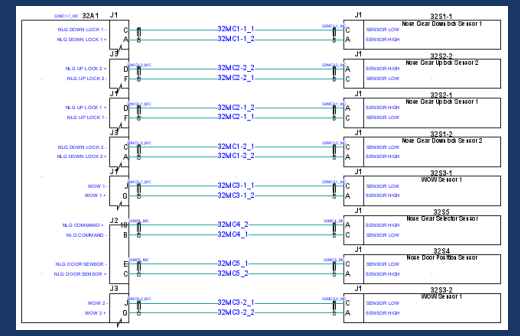


Common Tasks

- Create/Update ICDs
- Find and Associate Existing ICDs
- Manage Pin Mapping

Generate Electrical System

ICDs used in Capital Logic Designer



Common Tasks

- Complete Electrical Wiring Design
- Update ICDs

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Capital Device Modeler

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Benefit	Enabling Technologies
Single source of truth for electrical device data and ICDs	• Robust, standardized data model • Accessible to third party systems through REST API • Supports the digital thread with traceability
Improved data quality	• Correct-by-construction • Establishes consistency • Links to the component library and data dictionary
Reduced development costs & cycle times	• Design automation • Assets enabling re-use • Leverage responsible device owners

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Agenda

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- The Dictionary
- The Component Library
- The Device Modeler
- The Automation

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Maintain Standard Names

Web Solution

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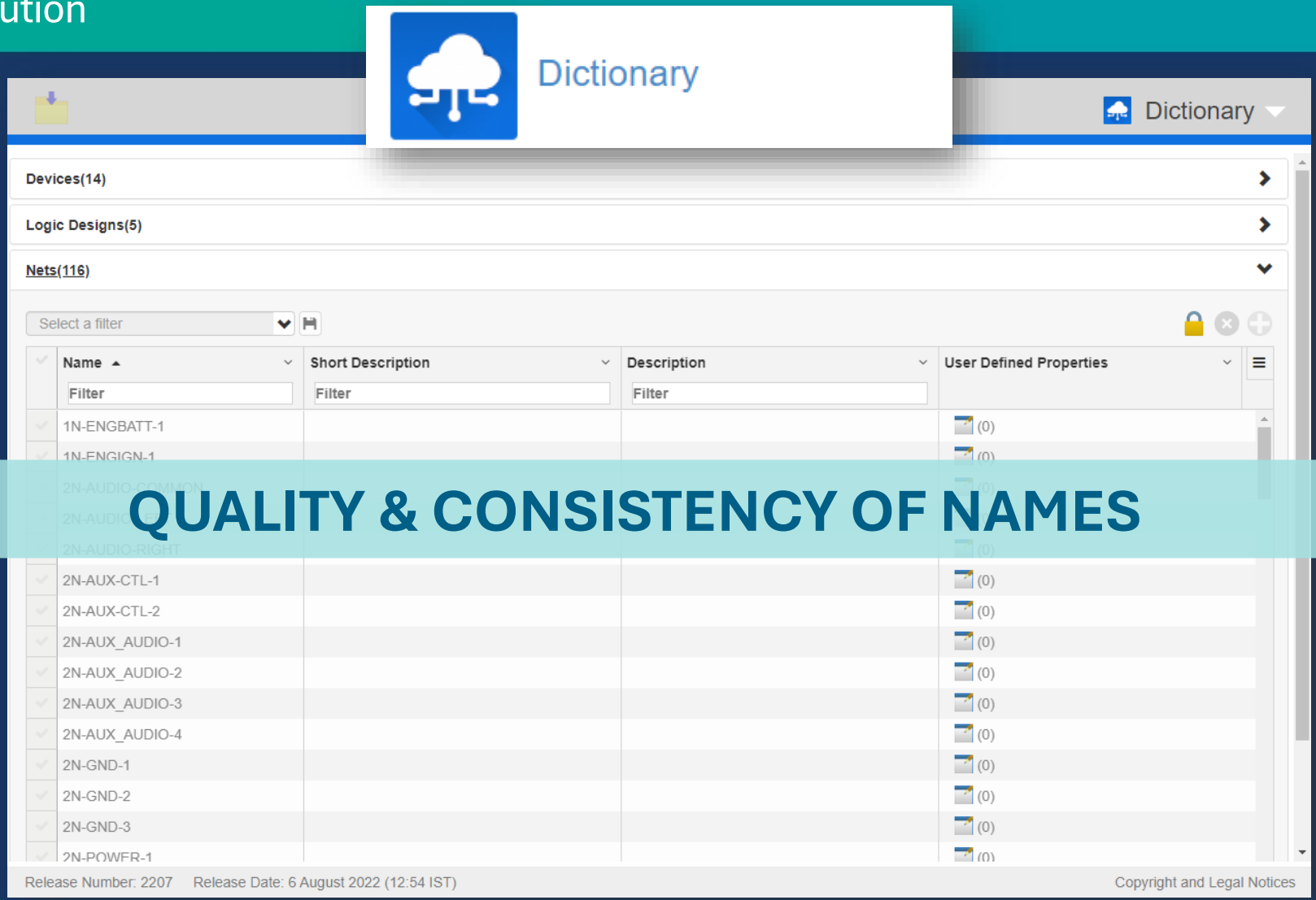
- The Dictionary
- The Component Library
- The Device Modeler
- The Automation



QUALITY & CONSISTENCY OF NAMES

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Live Demo

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Maintain Standard Names Dictionary Web Based

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The Dictionary

The Component Library

The Device Modeler

The Automation

- **Standard names for Devices, Systems and Nets** can be authored directly via the web
- **Immediate accessibility** by device engineers.
- Additional properties can be associated with the names and propagated to the nets and devices when placed in designs

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Create & Modify Library devices

Web Based Solution

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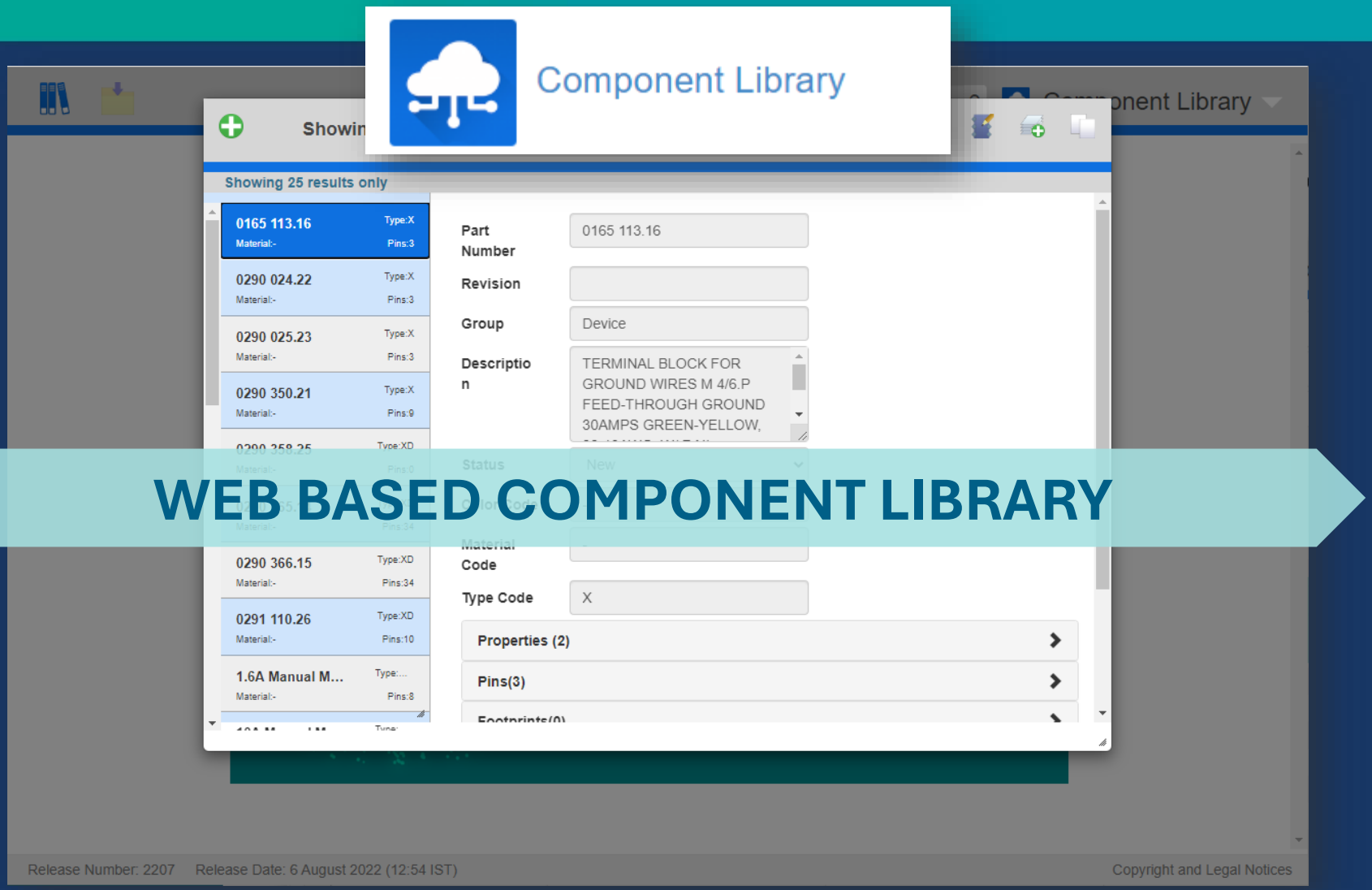
- The Dictionary
- The Component Library
- The Device Modeler
- The Automation



WEB BASED COMPONENT LIBRARY

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Create System Designs - Capital Logic

Data Driven Logical/Schematic Capture Tool

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The Dictionary

The Component Library

The Device Modeler

The Automation

- **Seamless access** into the component library allowing engineers to create and modify library devices and their properties and attributes
- Parts created in the Component Library, or from ICDs, can be **Assigned Domains**

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Capital Device Modeler

Web Based

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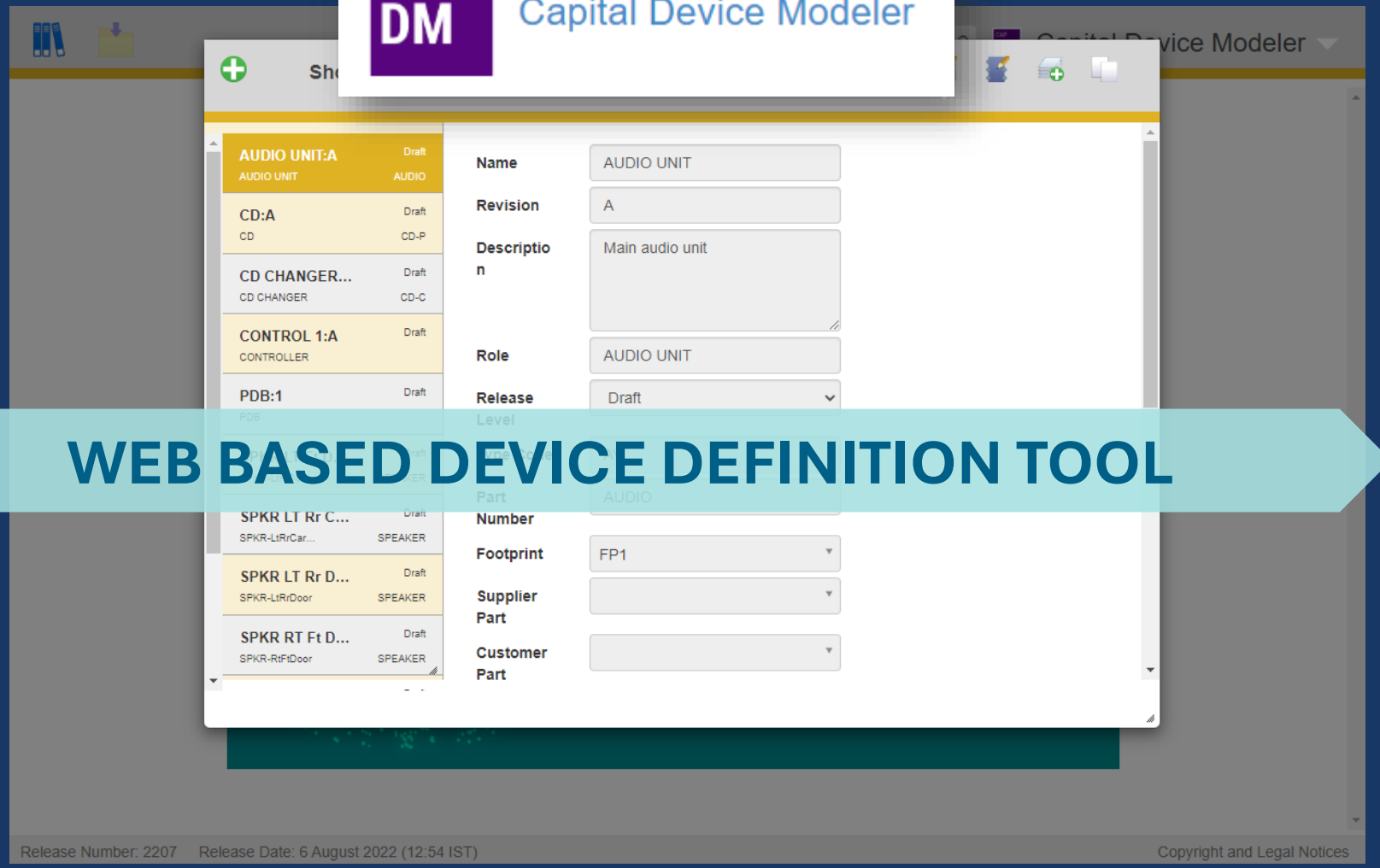
- The Dictionary
- The Component Library
- **The Device Modeler**
- The Automation



WEB BASED DEVICE DEFINITION TOOL

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Capital Device Modeler

Web Based

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The Dictionary

The Component Library

The Device Modeler

The Automation

- **Ease of Use** with a spreadsheet-like tool accessed by a web browser
- **Maximizes device definition** with controlled Data Entry

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Capital Device Modeler & Capital Logic

From Web to App

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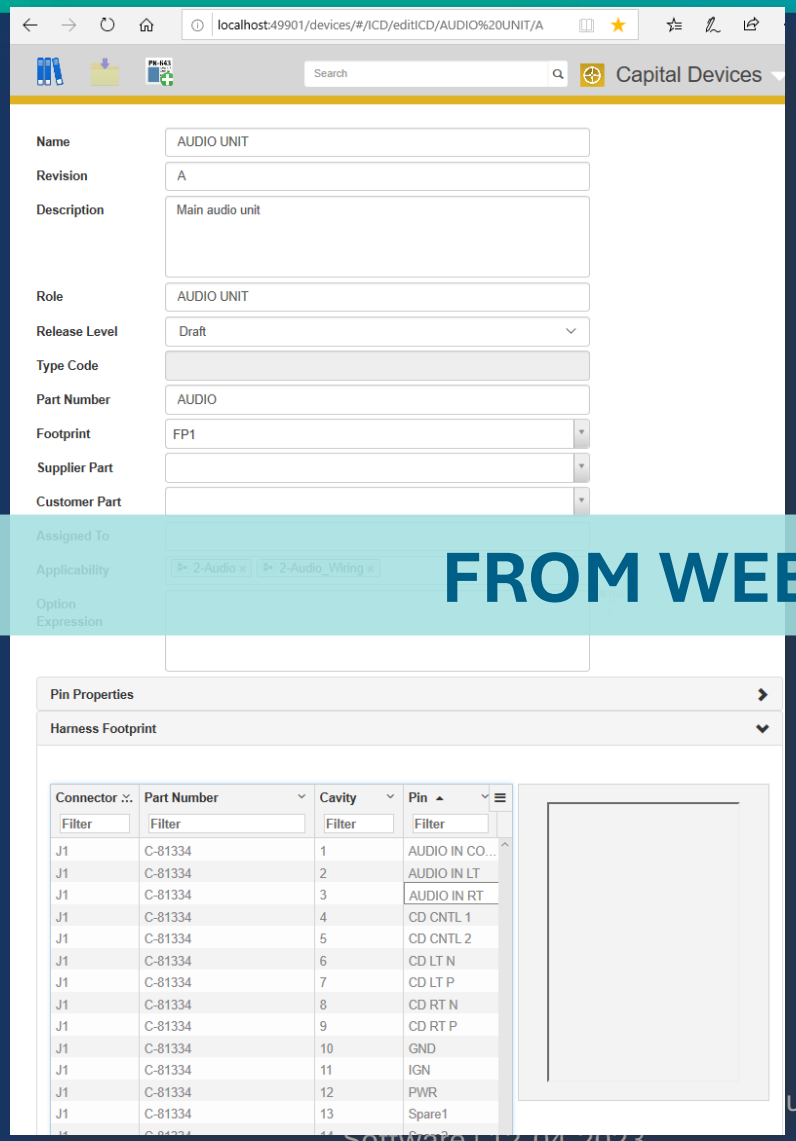
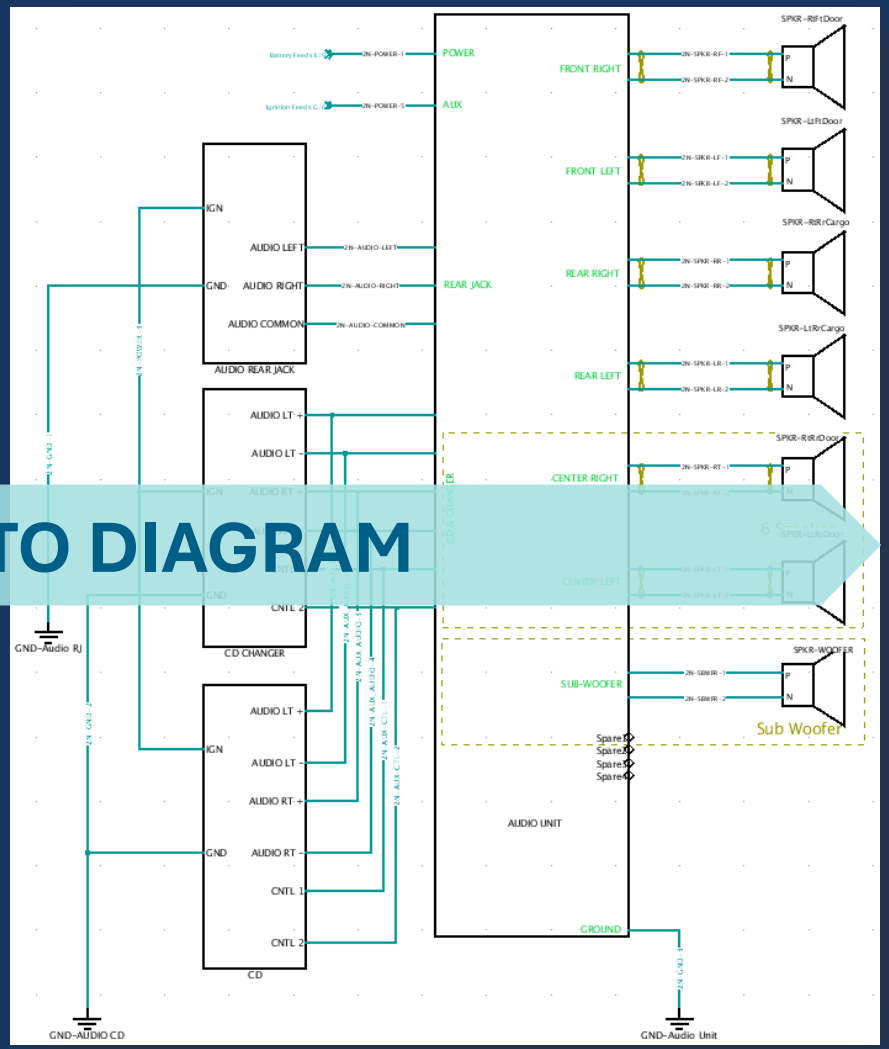
- The Dictionary
- The Component Library
- The Device Modeler
- The Automation



FROM WEB TO DIAGRAM



Live Demo

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Capital Device Modeler & Capital Logic

From Web to App

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The Dictionary

The Component Library

The Device Modeler

The Automation

- **Reduces design costs** by automatically creating connectivity

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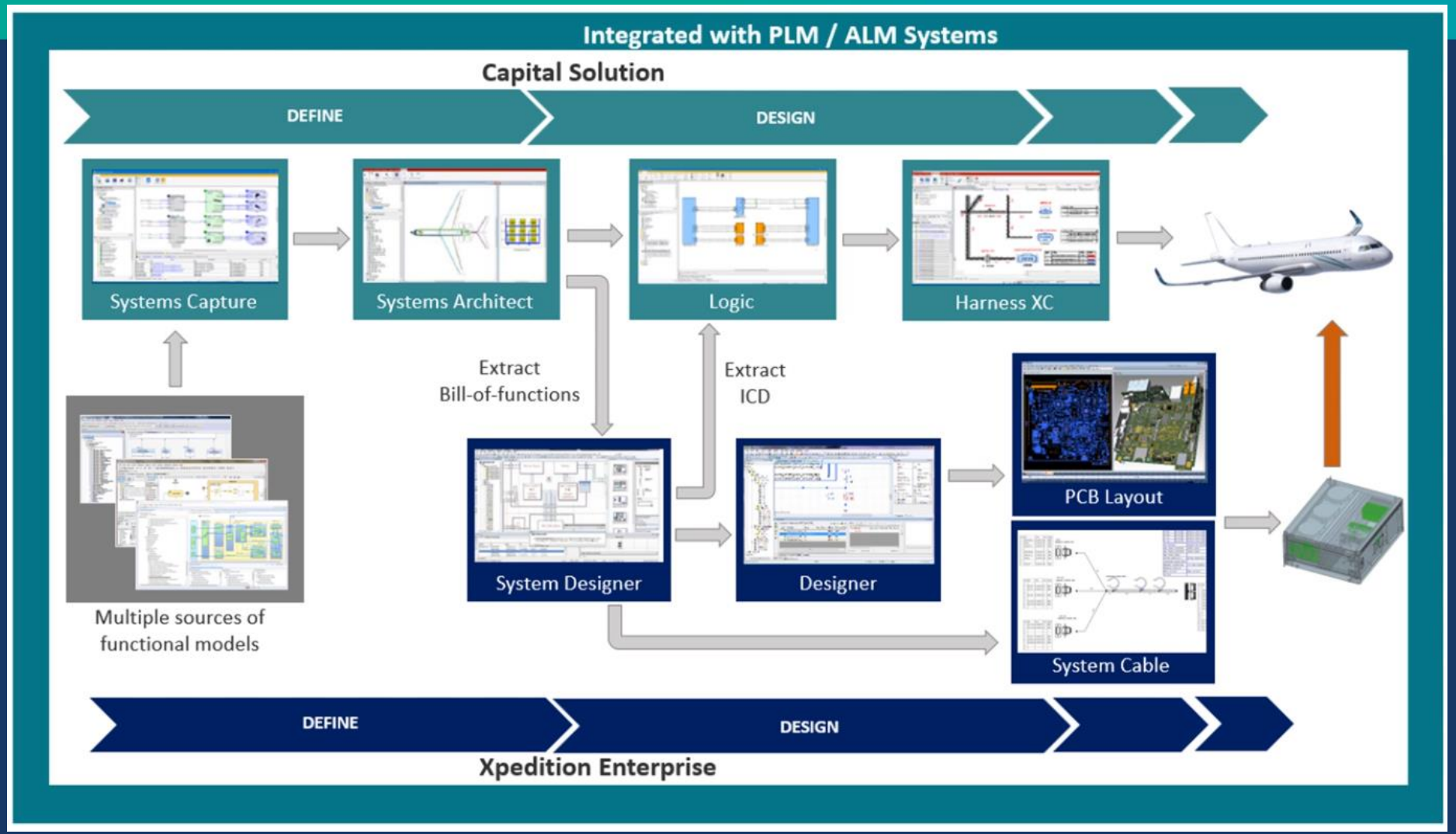
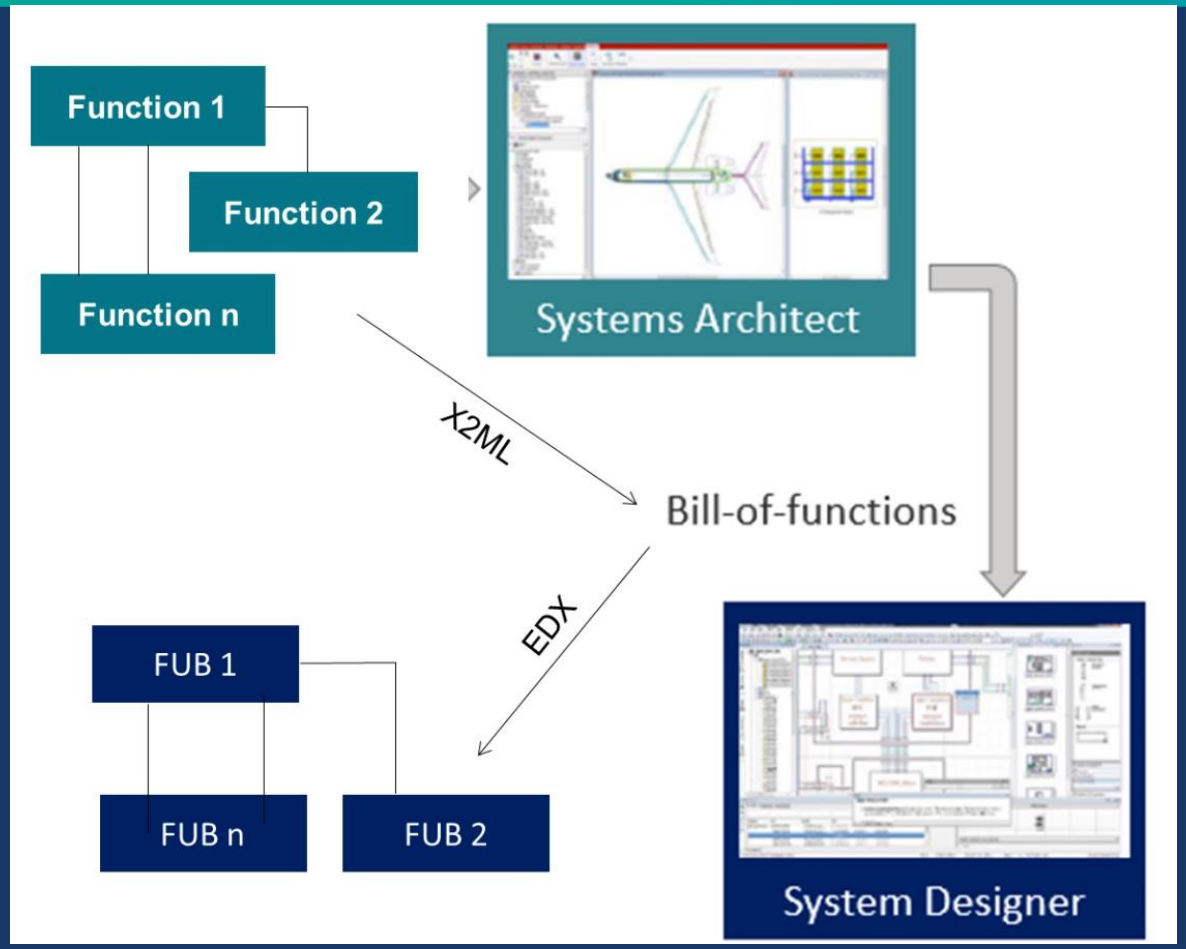
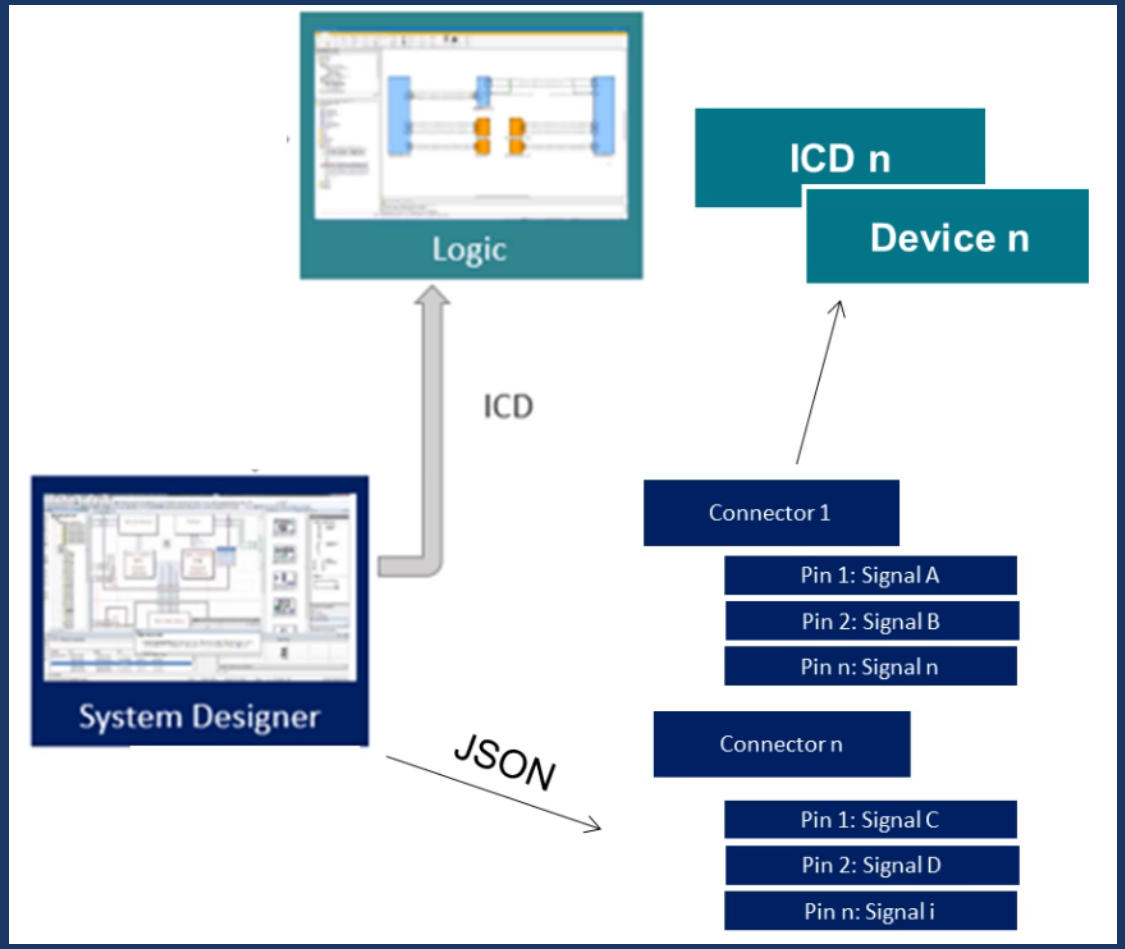
Capital Integration with Xpedition



Bill of functions to Xpedition



From Xpedition to Capital Logic



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Summary

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The Dictionary

The Component Library

The Device Modeler

The Automation

- **Integrates** the device engineers into the EDS flow
- The Capital database enables **digital continuity** from ICD definition through to harnesses supported by **design automation**
- A **flexible data model** to ensure that OEMs can capture everything they need about devices
- **Validation** to ensure designed electrical systems and harnesses are correct

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