XDF XILINX DEVELOPER FORUM

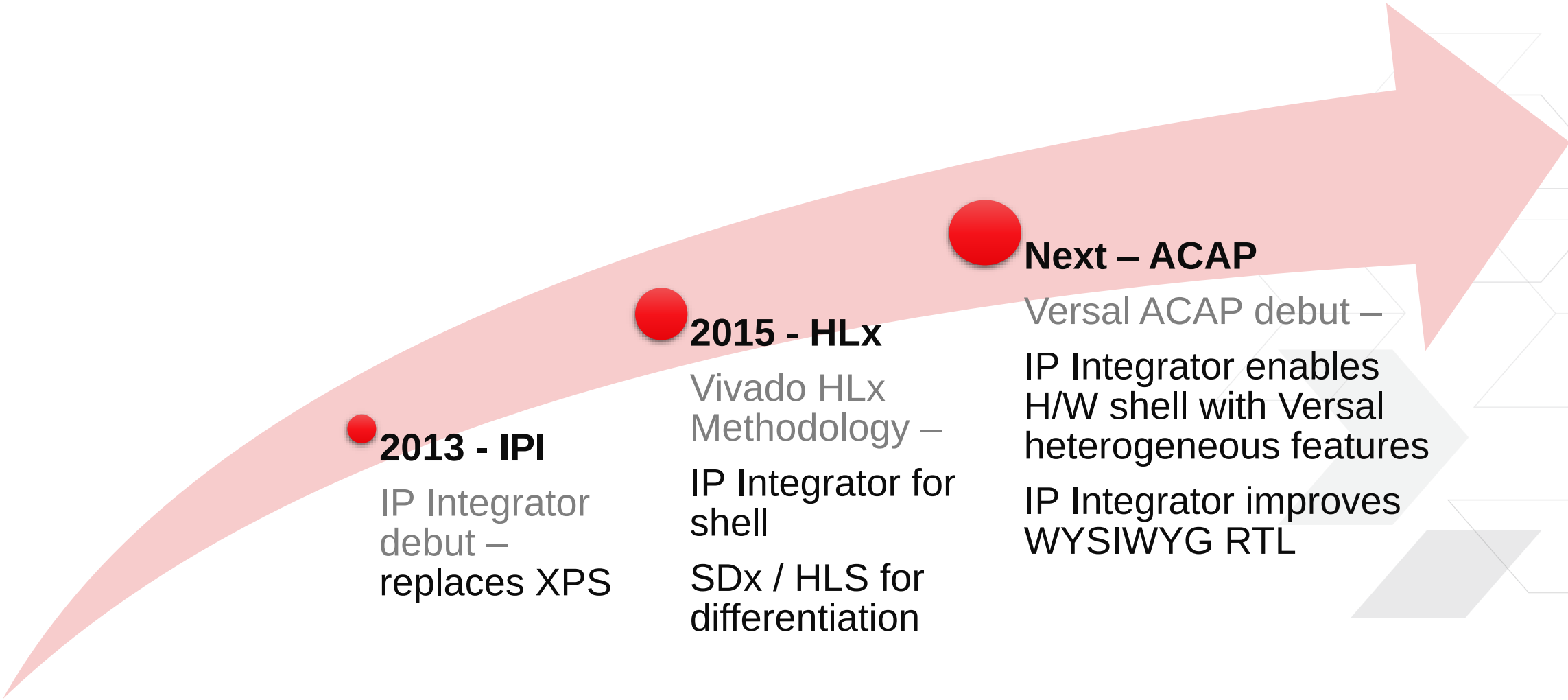
Tips and Tricks for IP Integrator

Presented By

Daniel E. Michek
Interaction Design
16 October, 2018

XILINX

The Evolution of IP Integrator



2013 - IPI

IP Integrator debut – replaces XPS

2015 - HLx

Vivado HLx Methodology – IP Integrator for shell

SDx / HLS for differentiation

Next – ACAP

Versal ACAP debut – IP Integrator enables H/W shell with Versal heterogeneous features

IP Integrator improves WYSIWYG RTL

What You'll See in this Presentation

- **Technical, demo centric, methodology tips presentation**
  - Helpful today
  - Needed for tomorrow

- **We'll see, using a real-world design**
  - Features of IP Integrator to rapidly build designs with complex IP
  - New Ease-of-Use features (Find, Pinning)
  - New Design Migration capabilities
  - New Design Differencing

Most Common Requests for IP Integrator

- **Ease-of-Use**
  - Finding IP, Freezing IP
  - Example Designs in IP Integrator
- **Migration Hurdles**
  - Selectively updating IP
  - Migrating to next generation devices
- **Team Based Design**
  - Enable teams to work in tandem (Spring 2019)
  - Visualize differences between Block Diagrams

Visual Walkthrough

> **Start to End**

1. Creating a new design for the KCU105
2. Creating an example design for HDMI
3. Using Find and hierarchical partitioning
4. Migrating from ProjectA.bd to ProjectB.bd
5. Cross Probing with timing closure
6. The toolbar review

--- 2018.3 Preview ---

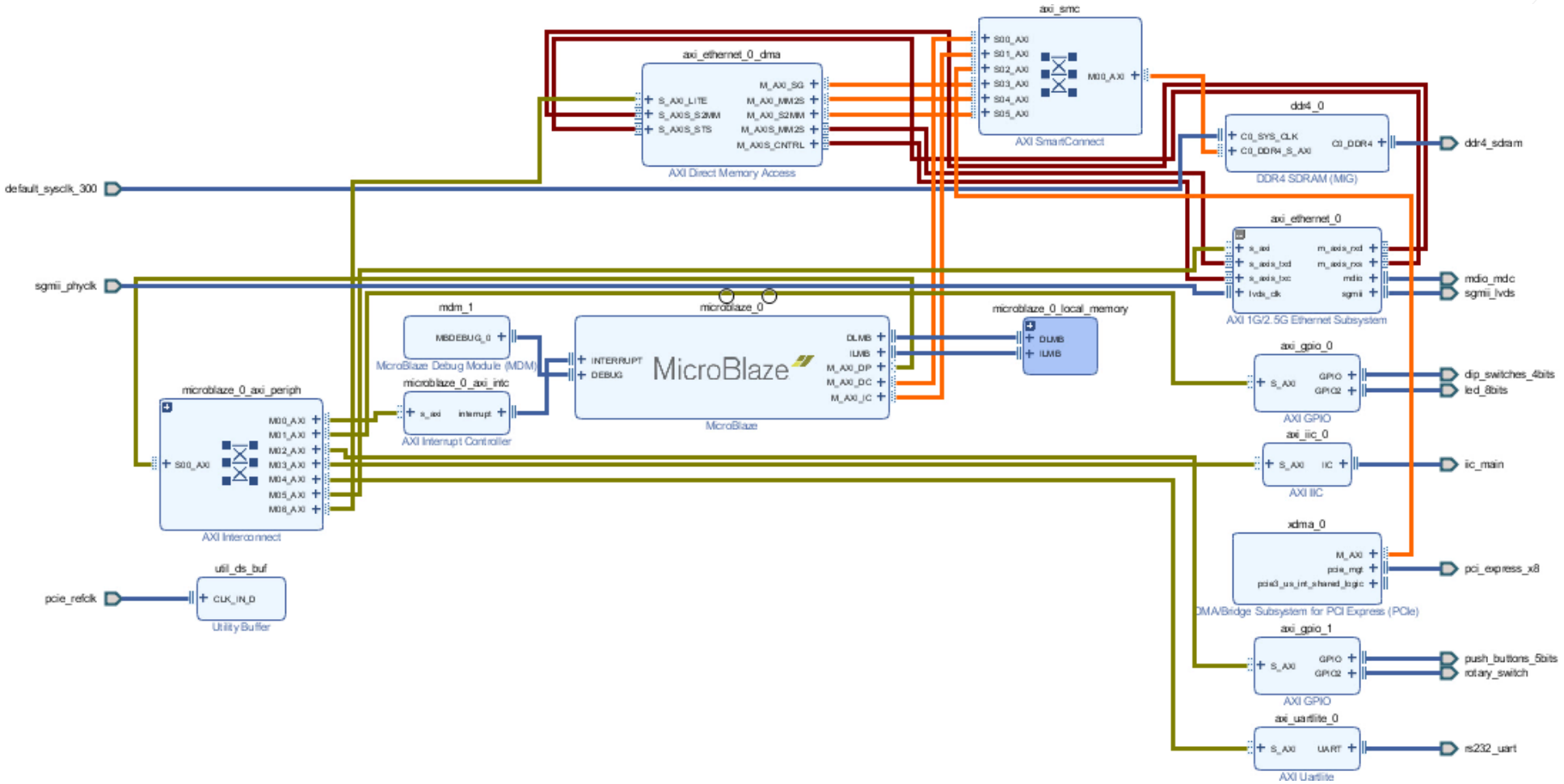
7. Selective migration from Vivado 2018.1 to 2018.3
8. What changed during upgrade in the block diagram
9. Migrating to the Versal NoC

Working with complex IP
Ease of Use

Team Based Design
Migration
Next generation devices

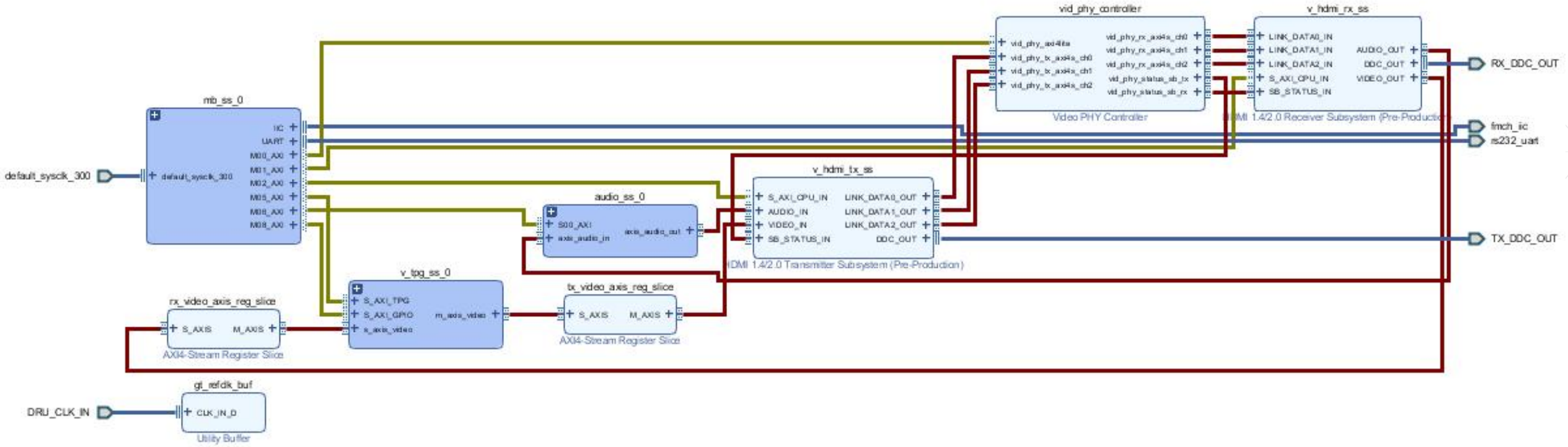
1. Ease of Use – Designer Assistance

> **Board, Block, and Connectivity Automation helps to put together systems**



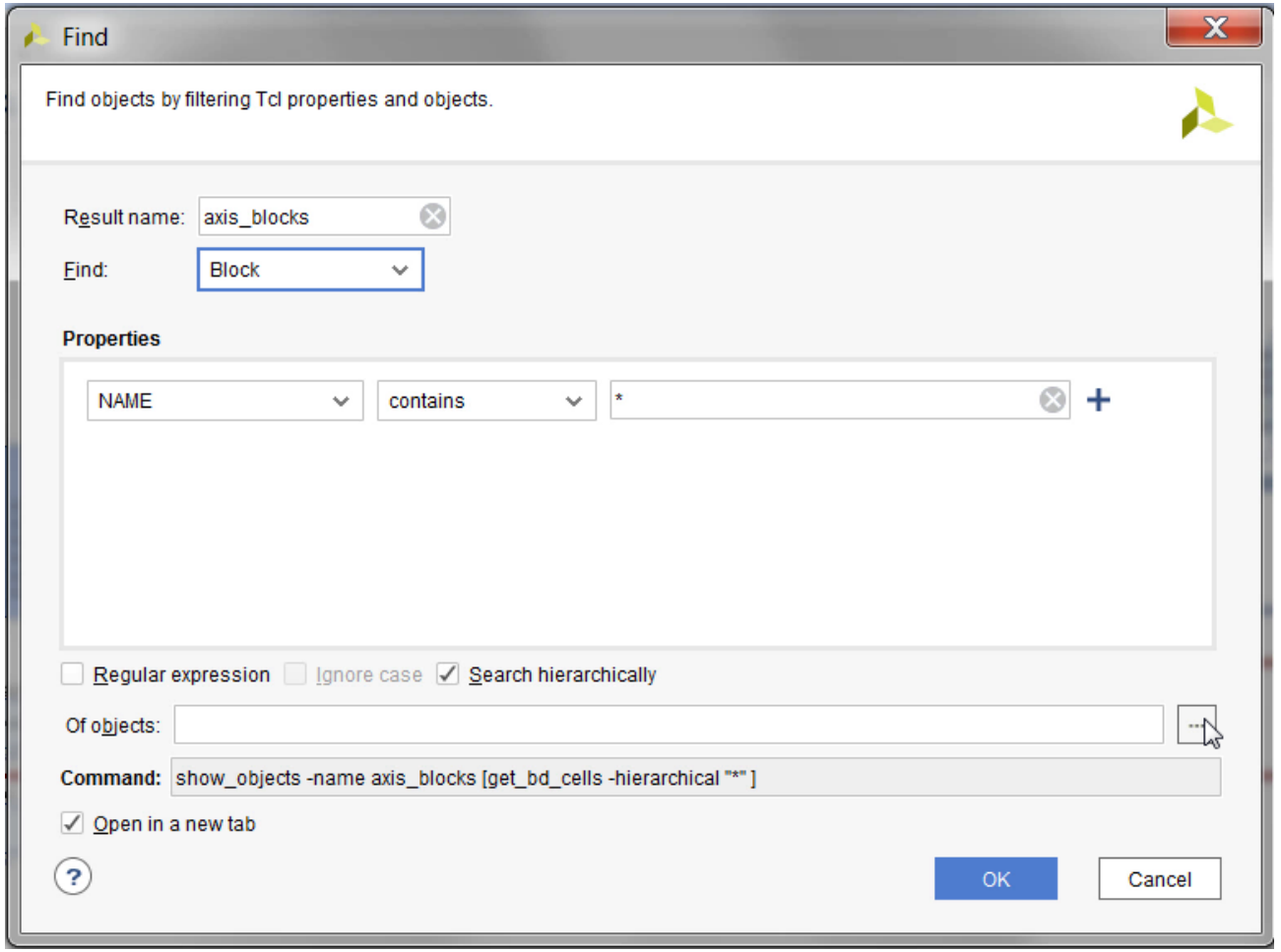
2. Example – Example Designs

> **Example Designs can be launched from IP Integrator or IP Catalog**



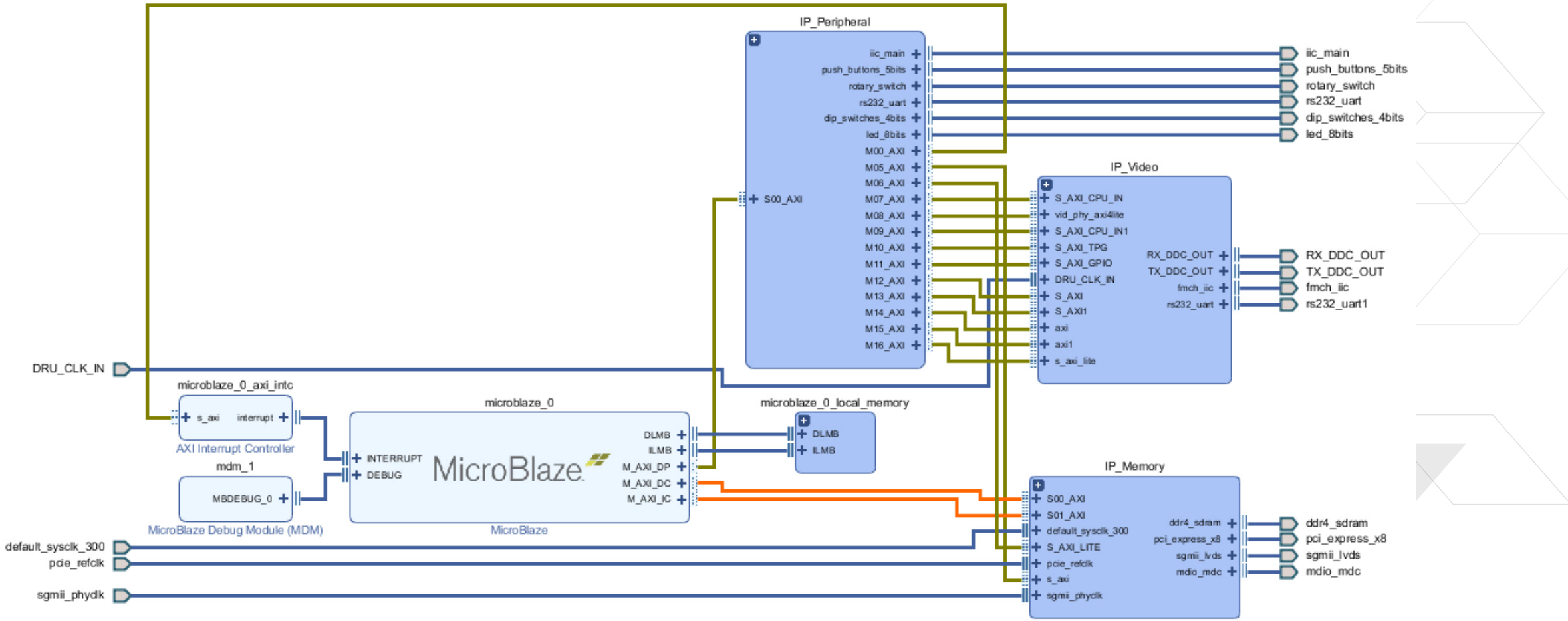
3. Ease of Use – “Super Find” in IP Integrator

- **Find items on the canvas based on connectivity, naming, or properties**



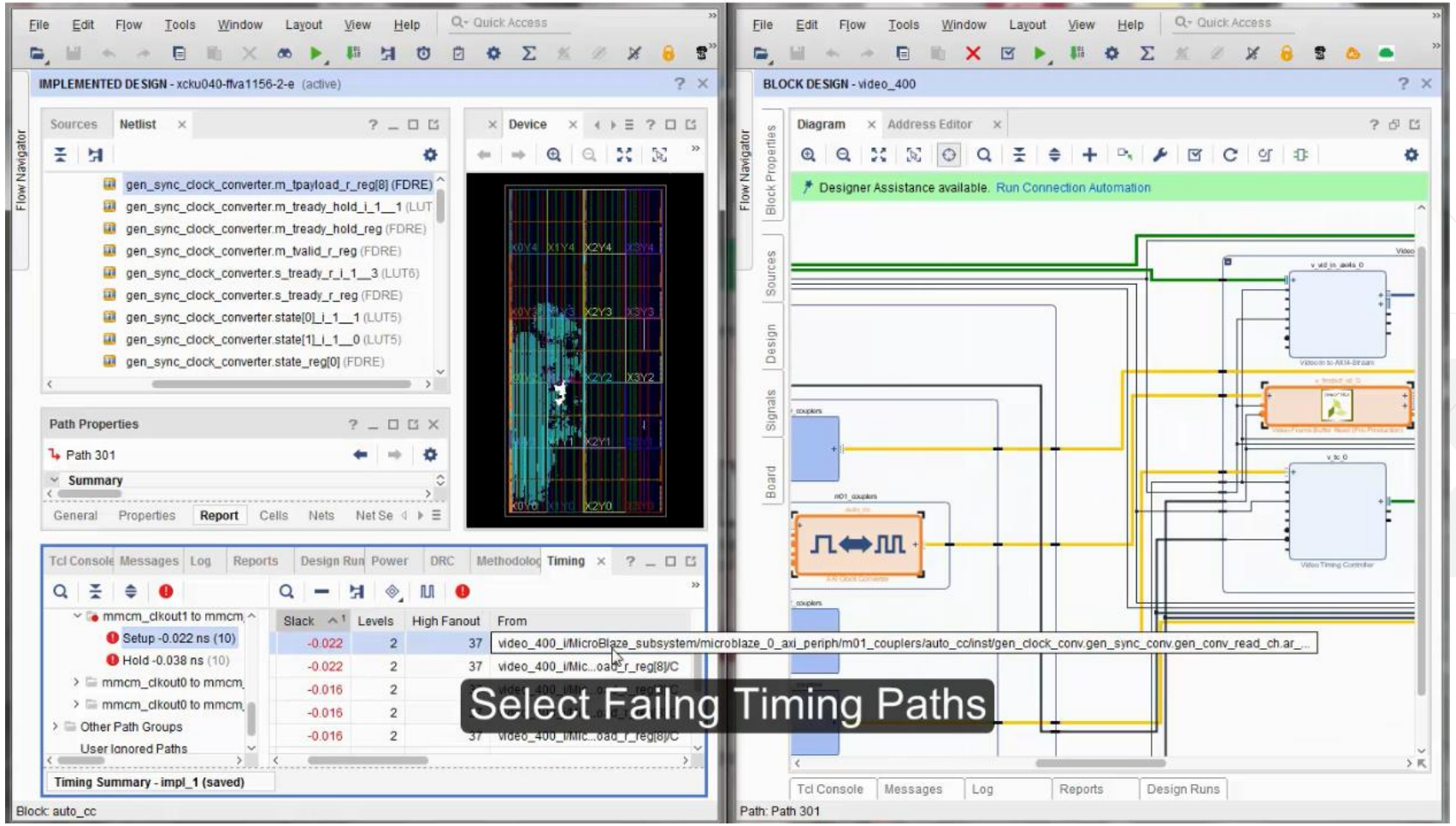
4. Migration – From One Block Diagram to Another

- **Block diagrams should be in the same project**



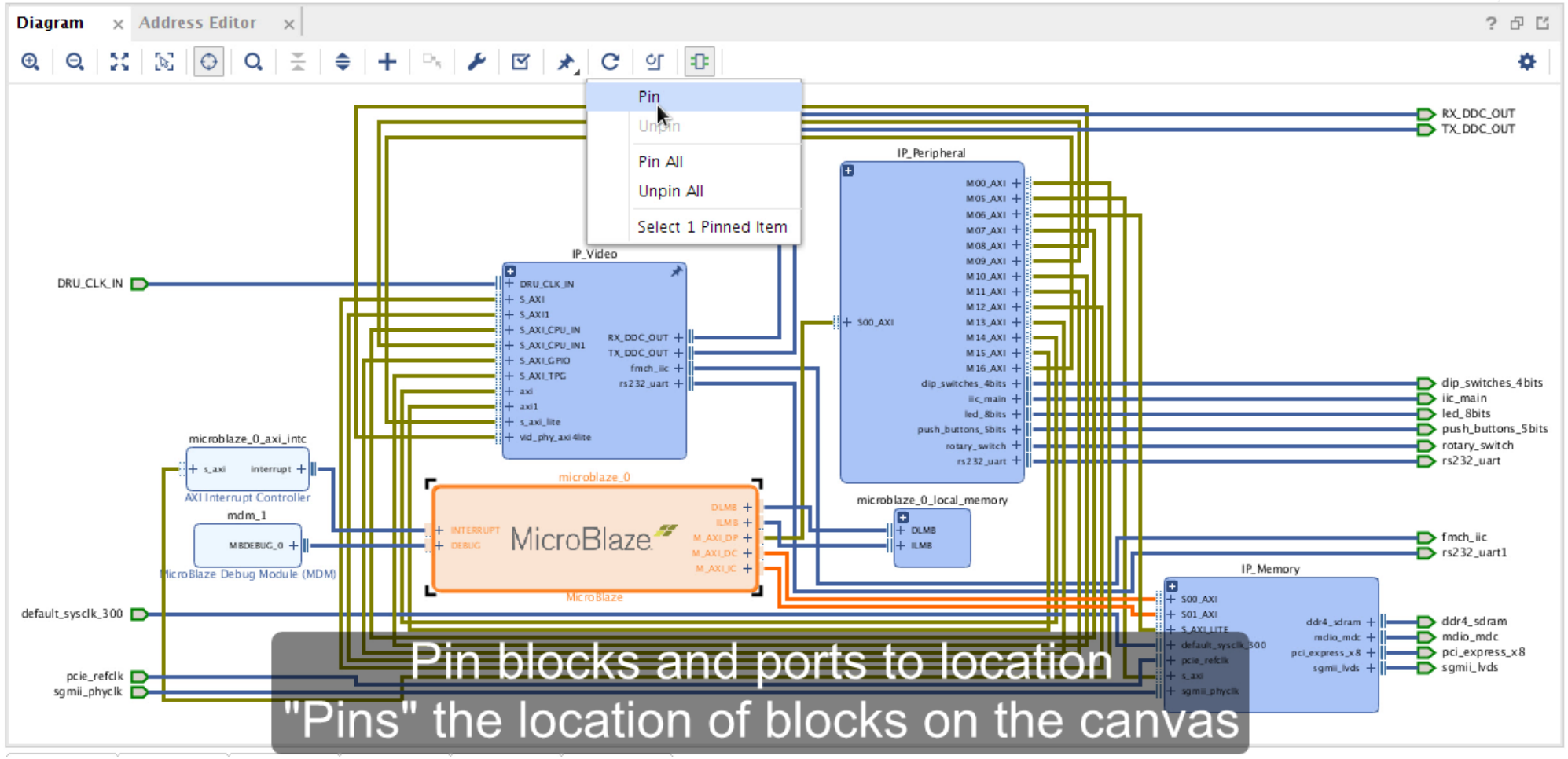
5. Ease of Use – Cross Probe from Timing Analysis

> **Quickly find areas that need improvement**



6. Ease of Use – Stop Squirming - Pin IP on Canvas

> **A review of the toolbar actions**



A Preview of IP Integrator's Migration Assistance in 2018.3

Visual Walkthroughs

> **Start to End**

1. Creating a new design for the KCU105
2. Creating an example design for HDMI
3. Using Find and hierarchical partitioning
4. Migrating from ProjectA.bd to ProjectB.bd
5. Cross Probing with timing closure
6. The toolbar review

--- 2018.3 Preview ---

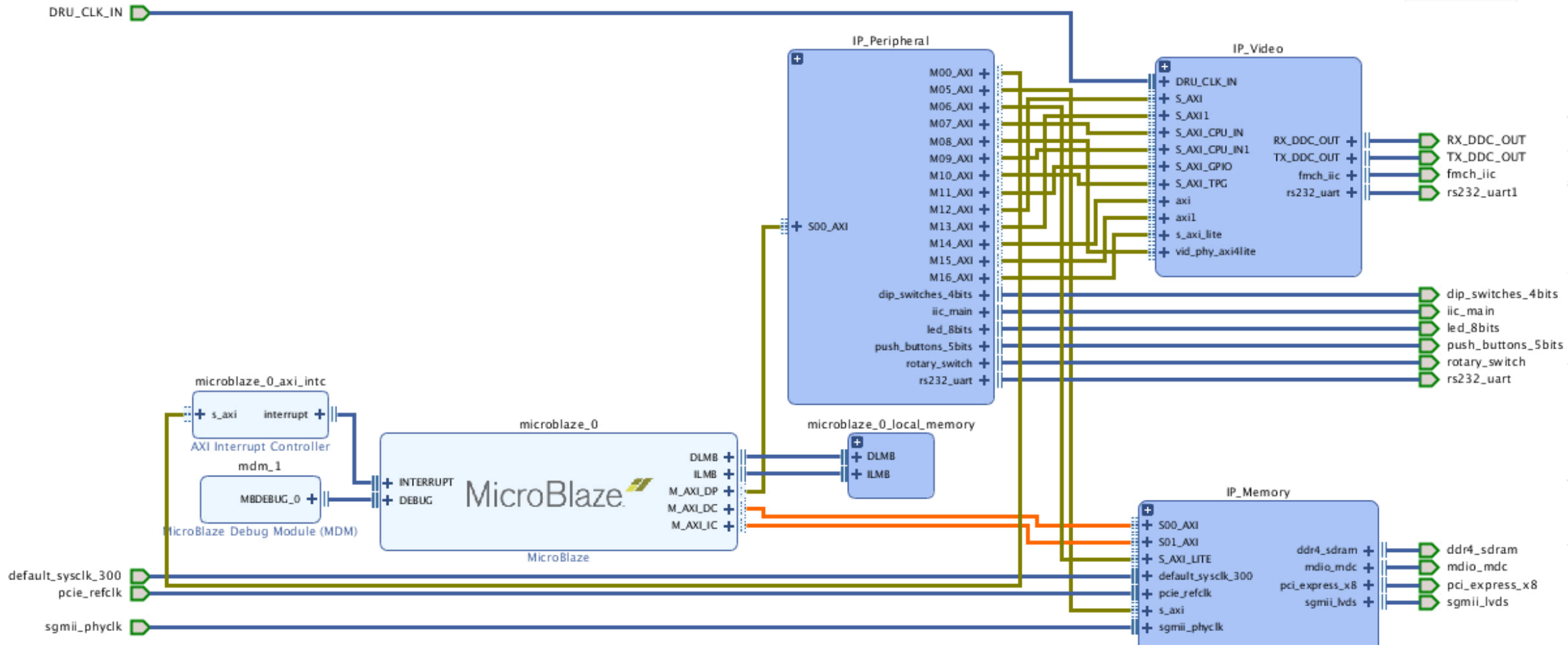
7. Selective migration from Vivado 2018.1 to 2018.3
8. What changed during upgrade in the block diagram
9. Migrating to the Versal NoC

Working with complex IP
Ease of Use

Team Based Design
Migration
Next generation devices

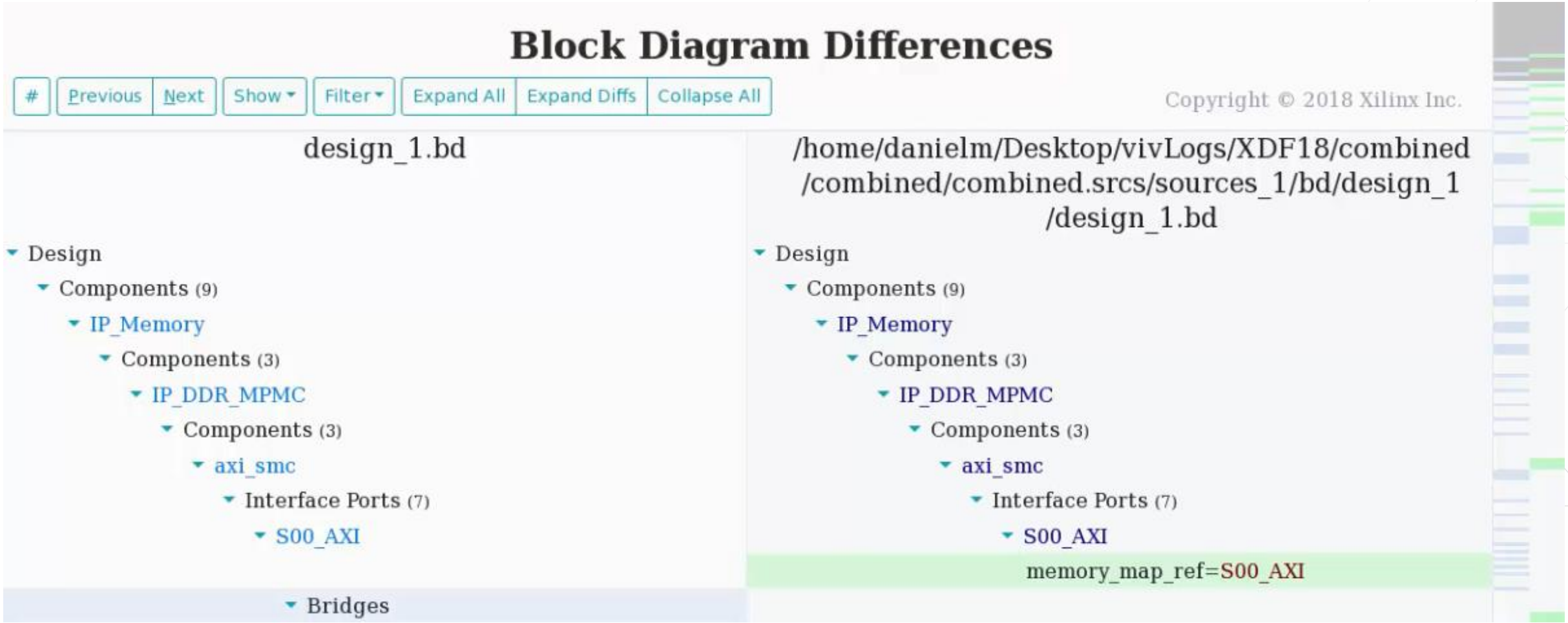
7. Migration – Vivado Versions via Partial Update

> **Keep the blocks which have been previously validated in-system**

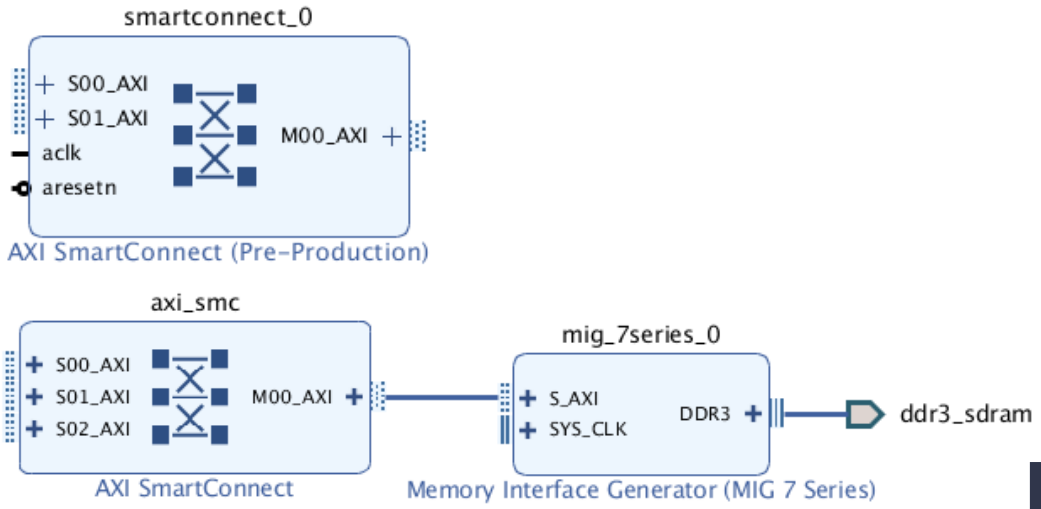


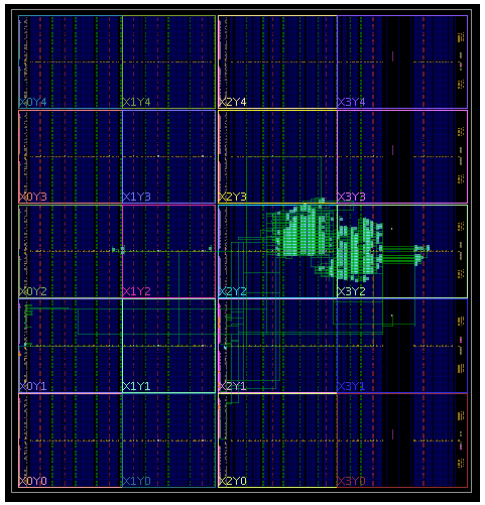
8. What Changed In the Upgrade?

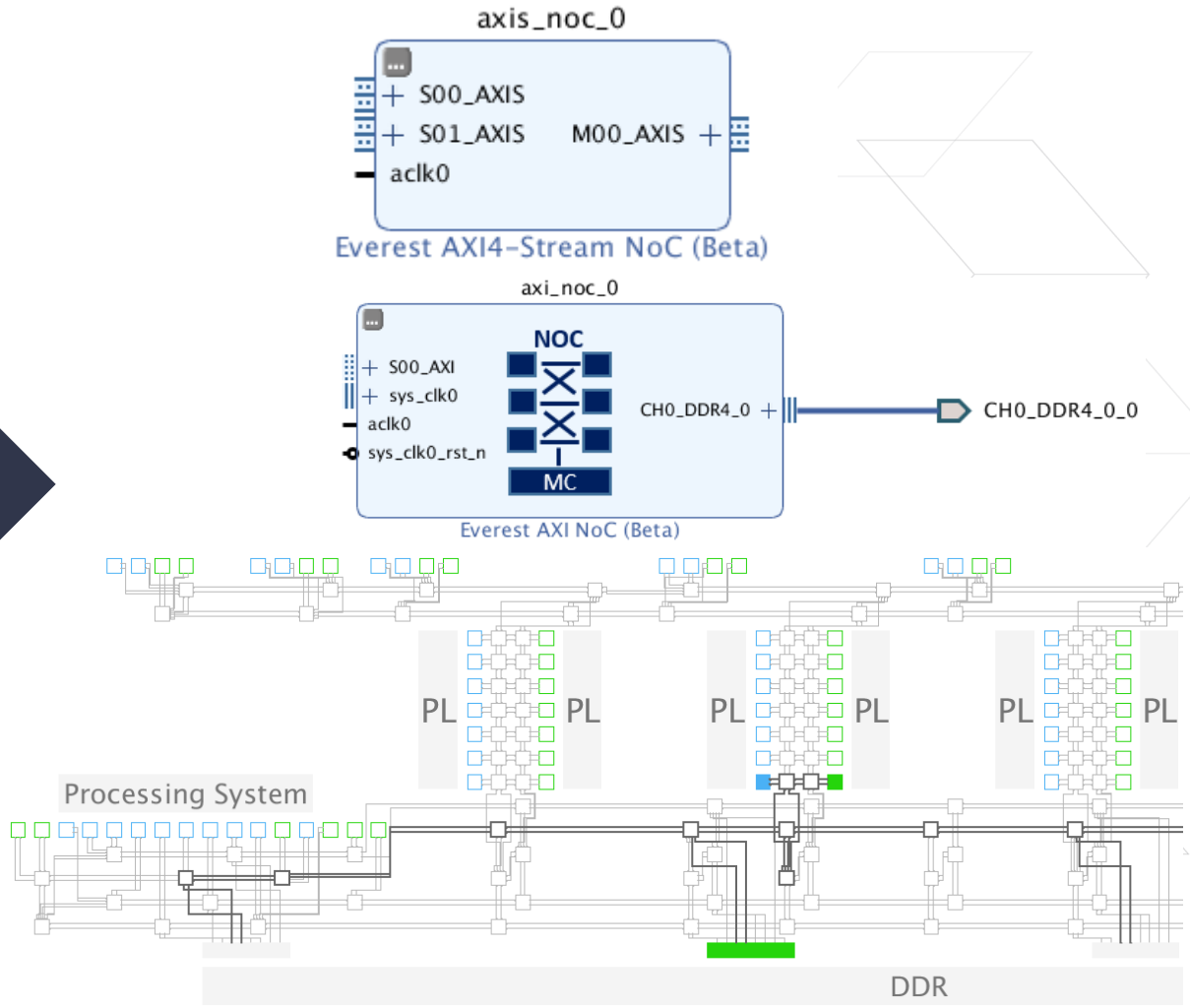
> **New interactive report shows differences between block diagrams**



Preview: Versal NoC!

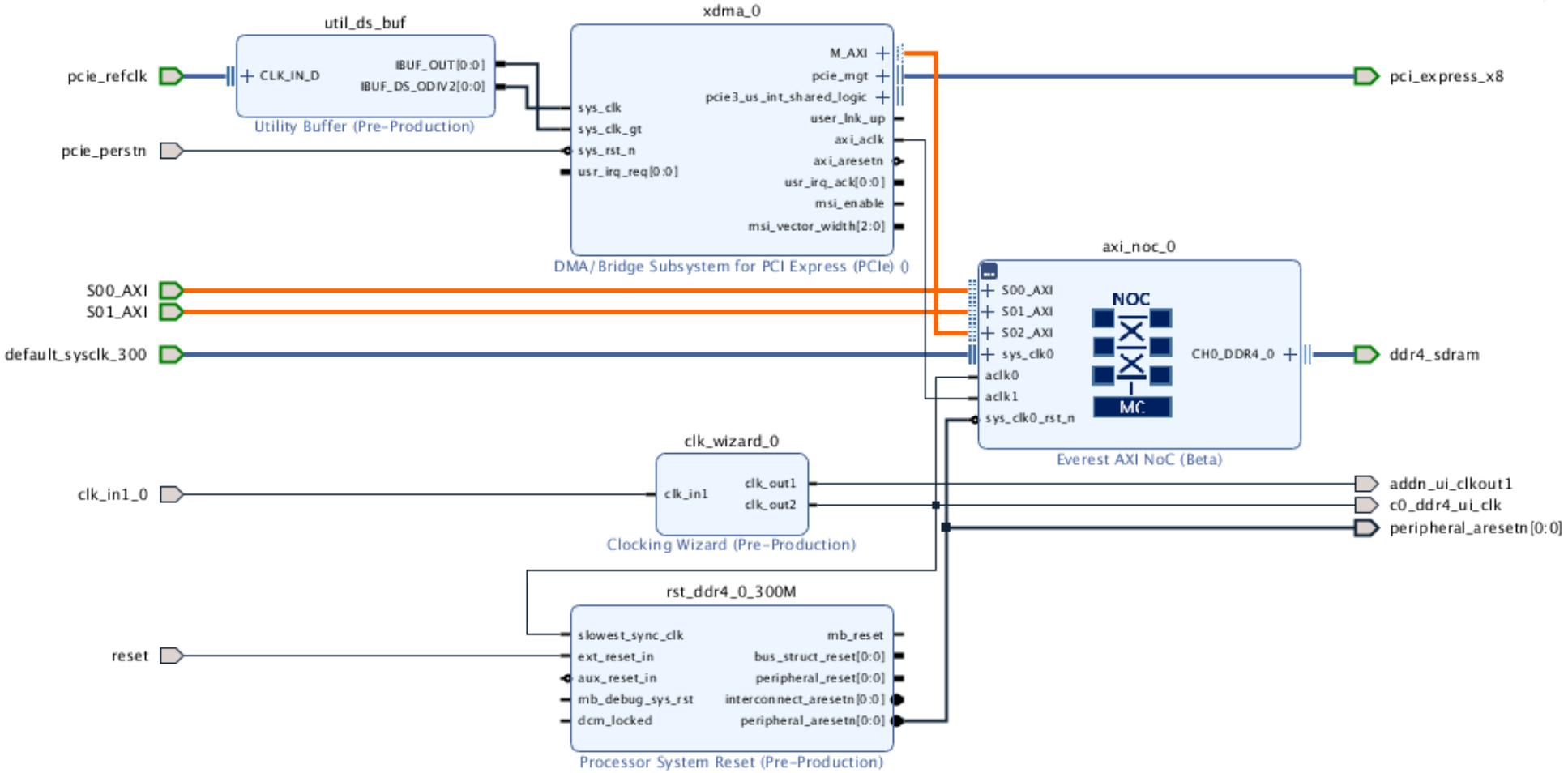






9. Migrating to Versal ACAP

> Upgrading our current project to reduce programmable logic resources (area)

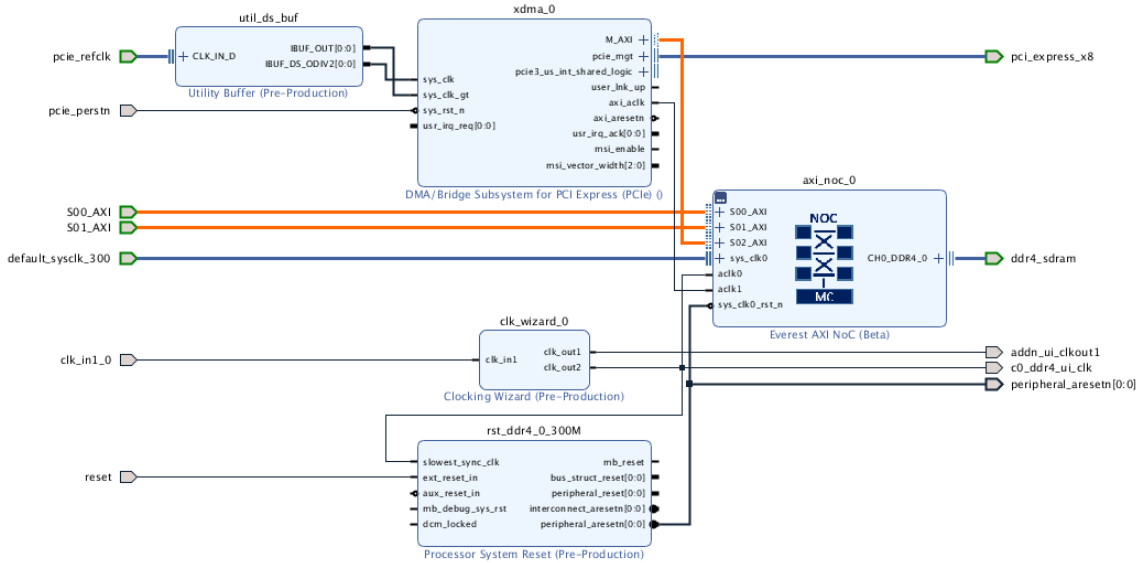


Most Common Requests for IP Integrator

> **Ease-of-Use**
  - >> Finding IP, Freezing IP
  - >> Example Designs in IP Integrator

> **Migration Hurdles**
  - >> Selectively updating IP
  - >> Migrating to next generation devices

> **Team Based Design**
  - >> Enable teams to work in tandem (Spring 2019)
  - >> Visualize differences between Block Diagrams



Changes to Our Release Schedule

- **Vivado previously had four full releases per year**
  - 2017.**1** & 2017.**3** introduced new features
  - 2017.**2** & 2017.**4** improved quality – Many users installed only the even releases
- **In 2018, we will have three full releases**
  - 2018.3 is coming soon
- **And two in 2019**
  - Spring and Fall – No more wait states for new features or quality
  - Quality is our top priority

Key Concepts: Vivado IP Integrator 2018.3

Board, Block, Connectivity, and Migration Assistance

- Take advantage of IP Integrator's built in assistance to create your ideal processing system -- including adding customized interfaces for networking, video, and DSP

Getting ready to migrate to Versal ACAP

- The migration to Versal ACAP will continue to add new assistance features and increase the traceability of IP Integrator