Managed Block Design

Xpedition Enterprise

Overview

Managed block design provides engineers and designers with an efficient method to develop and publish blocks of "known good" circuitry from schematic and layout tools for reuse in new products. The ability to easily reuse proven elements from previous designs through a library of "certified" circuits allows product development teams to leverage past successes for the benefit of new products.

There are two types of managed blocks:

1. Self-managed blocks — the basic flow for sharing design IP within a small design community. The self-managed flow supports basic data management and sharing without EDM tools integration.

2. Enterprise-managed blocks — the comprehensive flow for sharing design IP within an enterprise design community. The enterprise flow supports formal data management and sharing using the Xpedition® EDM tool suite to control and propagate reusable circuit blocks to production library caches.

Both design flows provide the ability to publish and share reusable logical and physical Intellectual Property (IP) directly from applications to quickly build new products. The primary difference between the flows is the formal management of the source design and the library content when using enterprise-managed block design.

MAJOR BENEFITS:

- Supports concurrent development and accelerates design creation with a "building block" design process

- Jumpstarts new designs through the reuse of existing IP

- Eliminates repeated creation of the same circuitry

- Supports the certification of critical IP

- Provides improved quality and reliability of complex designs that use managed block circuitry

- Supports formal management of complex block circuitry and the designs that use block circuitry

- Facilitates the efficient exchange of blocks between schematic, layout, constraint management, variant, and ECAD Data Management (EDM) tools.
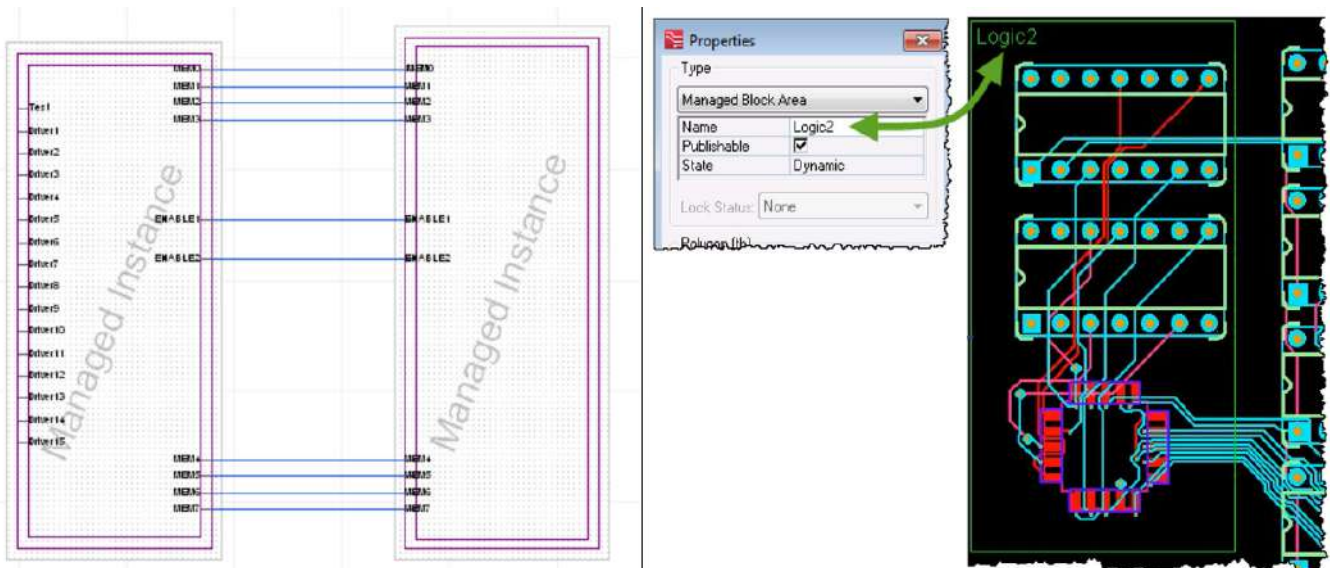
Managed block design facilitates the reuse of "known good" circuit blocks

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Self-Managed Block Design

The self-managed block design methodology provides engineers and designers with control of block circuitry creation, development and deployment to library clients for use in new designs without the rigidity of a formal process. Self-managed blocks do not use Xpedition for design and library management.

The inherent flexibility of self-managed blocks allows engineers and designers to make frequent changes to block circuitry without the overhead of a formal Engineering Change Order (ECO) process. Self-managed block circuitry is available earlier in the schematic and layout design process, which supports a concurrent product development environment.

The self-managed block design methodology uses schematic design and layout tools to define and extract logical and logical/physical block circuitry from source designs and to place the blocks in new designs. Engineers and designers have the flexibility to design, publish, and expose blocks for use in new designs and also to propagate engineering changes from the source block design into designs that use the block.
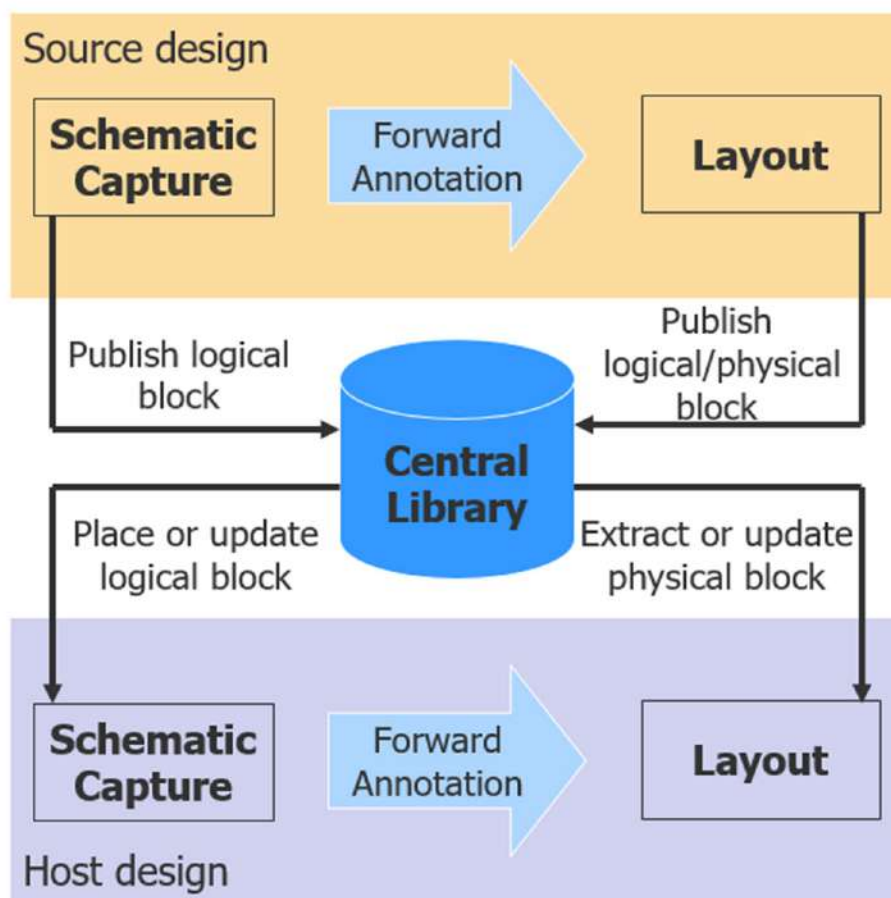

Figure 1: Self-managed block design flow

Enterprise-Managed Block Design

The enterprise-managed block design methodology uses the Xpedition EDM tool suite for data management of the block, source design, and library objects. Schematic capture and layout tools launched from the EDM suite manage block design creation, development, deployment, and change orders in a tightly integrated system.

The EDM design cockpit manages the source design projects and managed block design data. Users invoke design authoring tools, such as Xpedition Designer and Xpedition Layout, to create, update and publish logical and logical/physical managed block objects. When published, managed blocks save to the EDM design cockpit and the EDM library cockpit. The EDM tools control the relationships between design data and library data.

Users can also place published logical and logical/physical reusable circuits that are managed by the Xpedition EDM tool suite in host designs that are external to EDM. For example, users who can access reuse blocks from a production library cache can use those blocks in designs without EDM integration.
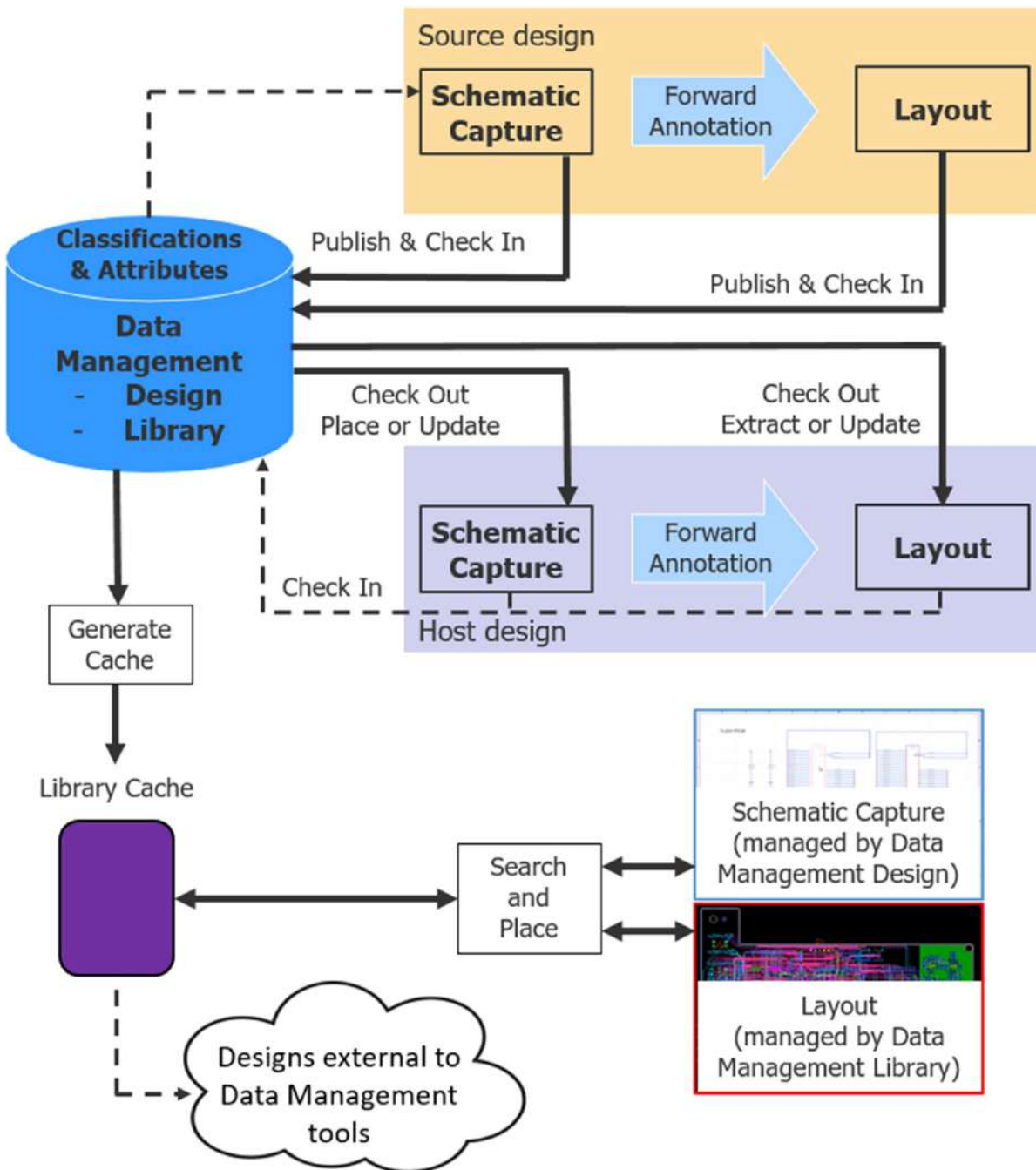
Figure 2: Enterprise-managed block design flow

Feature Comparison

Table 1 details the features available for self-managed blocks and enterprise-managed blocks within the Xpedition flow.

FEATURE AVAILABILITY	SELF-MANAGED	ENTERPRISE-MANAGED
Logical blocks Logical/Physical blocks	Yes	Yes
Block development states	Yes	Yes
Constraint data support Variant data support	Yes	Yes
Access control to managed block source designs Reporting (owner, last used)	No	Yes
Formal approval workflow for Engineering Change Orders (ECOs) to blocks	No	Yes
Versioning and relationship tracking (including differential version comparison)	No	Yes
Change notifications	No	Yes
Publish managed blocks with attached documents	No	
Collaboration tools • User and System • Data mining	No	Yes
Distribution and management • Multi-site distribution • Secure IP	No	Yes
Block obsolescence	No	Yes

Table 1 – Feature comparison

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