

# PTC Integrity™ Asset Library™ at Design Time

Enables scalable modeling for systems-of-systems, component based development, and service oriented architectures

PTC Integrity Asset Library integrates with UML and SysML modeling to enable component based design, services oriented architecting, and systems-of-systems planning.

## Design challenges

Many of today's systems and applications are built from sub-systems and software components, or use service oriented architectures. With most UML and SysML modeling environments, however, you have the choice between unconnected sub-models or large, complex models. If only there was a way to design CBD, SOA, and SoS systems the same way you build them: With finer grained models that map directly to implementation sub-systems or software components that can be plugged together in higher level models. While models can already be broken up, the real challenge is linking these parts with configuration models to provide a joined-up environment between models and tools.

PTC Integrity Asset Library solves these problems and more with a highly scalable repository and multi-user web browser user interface for asset publication, management, and reuse. In addition, PTC Integrity Asset Library integrates with your UML and SysML models, providing a design-time library of reusable assets. Its assets can represent 'blackbox' blocks or classes with public ports or interfaces, which can be used as building blocks in your higher level models. Simple cut and paste actions publish assets from your models and reuse them in other models, setting up traceable links at the same time.

## Top-down architected approach

Considering a top down architected approach first, you can design your systems and applications with tentative blocks and classes (assets), and then search PTC Integrity Asset Library to see if any thing usable already exists. If you find a suitable asset or negotiate changes with an existing asset owner, you can use its 'blackbox' definition directly within your model. If you don't find what you are looking for, you can publish your tentative asset specification for someone else to deliver.

An asset supplier can then copy this PTC Integrity Asset Library specification into their model, design the system or component internals, and push a new version of the specification (optionally with an implementation) back into the library. As an asset consumer (system or application architect), once you receive an automated notification, you can replace your tentative 'black box' asset with the implemented version and wire it up in your model.

When assets change over time, automated notifications link you to the asset so that you can assess it and optionally update the asset's version that you used in your system or application design. Your system and application models become 'configurations' referencing specific asset versions whose internal, white-box designs reside in separate models. Asset dependencies can also be defined in the library, so that dependent groups of assets can be reused in a model with a single copy and paste.

This hierarchy of parent and child models can run to any hierarchy depth and is easily navigable. You can click on an asset in PTC Integrity Asset Library and open it in PTC Integrity Modeler™, click on a PTC Integrity Modeler class or block, and open its PTC Integrity Asset Library page or a child model by clicking on a class or a block in a parent PTC Integrity Modeler model.

### “Design the way you build”

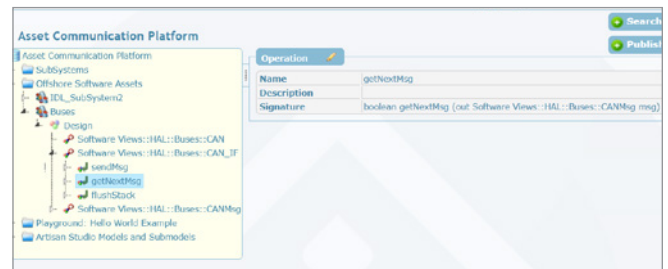
As well as top-down architected CBD, SOA, and SoS, you can also use PTC Integrity Asset Library for opportunistic reuse by auto-publishing structured artifacts that may not have been modeled (e.g., IDL files). Once published, these assets can also be used in your higher level PTC Integrity Modeler models, enabling legacy reuse, wrapping, and system integration. PTC Integrity Asset Library and PTC Integrity Modeler let you design the same way you build.

### Key benefits

- **Single, simple design approach:** PTC Integrity Asset Library modeling integration gives you a single, simple design approach which is equally applicable for green-field and brown-field projects. It lets you break complex system designs into more easily understood sub-models, dramatically improving communication and understanding. This also facilitates parallel design and ‘design by contract’, radically increasing productivity. Pluggable model assets also provides real value for architects ensuring that sub-systems, software components or services will all work together when assembled and ultimately meet your system requirements.

- **A tool-agnostic approach:** The PTC Integrity Asset Library’s API not only provides integration for PTC Integrity Modeler but can be extended with additional adaptors for other UML, SysML and proprietary modeling tools, and structured files:

- Future-proof your investment
- Publish reusable model assets from a wide range of sources
- Increase the returns on your development investments



Asset Communication Platform

- **Find problems earlier:** Using PTC Integrity Asset Library for design-time CBD, SOA, and SoS gives you all the benefits of modular construction at the beginning of the lifecycle, finding problems much earlier when they are cheaper to fix and have a greater impact on the following stages of your projects:
  - Maintenance overheads are reduced as parts of the design can be easily replaced over time
  - New and improved assets can be exploited
  - Distributed design is simplified with teams taking responsibility for their own sub-models and versions and traceability provided up to the configuration models
- **Reduce costs:** Reusing pre-designed and implemented sub-systems, components, and services can save up to 60 percent of the costs on your system and application development projects.

## Capabilities and specifications

- PTC Integrity Asset Library integration with PTC Integrity Modeler enables highly scalable modeling for systems-of-systems, component based development and service oriented architectures
- OMG SysML 'block' publication and reuse
- OMG UML 'class' publication and reuse
- OMG reusable asset specification (RAS)
- RAS database
- Interest registry and email notification
- Component Based Design (CBD), Service Orient Architecting (SOA), System-of-Systems (SoS) planning and design
- Consumer – supplier model links
- Asset meta-data and traceable links seamlessly join your models, giving you a design environment that is a step above the rest

## Platform support and system requirements

For more information, visit: [PTC.com/go/integrity](https://www.ptc.com/go/integrity)

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