



PTC SOFTWARE PRODUCTS LICENSING BASIS

Scope of this Document

This document sets out the licensing basis and restrictions for each of PTC’s Licensed Products. In most cases, this document is incorporated into the legal documents governing the Customer’s use of software licensed from PTC (collectively the “License Agreement”). In the event of inconsistency between this document and the PTC quote pursuant to which the Customer purchased the licenses (the “Quote”), the Quote shall govern. For example, this document may identify that a product is licensed in a particular way, but if the product name on the Quote specifies a different licensing basis, the Quote shall govern. PTC may update this document from time to time, but each purchase made by the Customer will be governed by the most current version of this document in effect at the time of the purchase.

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DESCRIPTION OF COMMON LICENSING BASES

“Concurrent User” (CU): Each Concurrent User product license may be used by one individual person at any given time.

Concurrent User products are generally “floating,” except:

- **License Locked (L):** Where the part number contains the suffix “L”, such products may only be used with another PTC product to which the product is an extension and the License Locked Product will assume the licensing basis of such other product.
- **Multiple Instances:** An individual using multiple instances of Concurrent User products at a particular time will in most cases consume that number of licenses. That is, for example, if a user opens two instances of Creo Elements/Direct, that user will be consuming two licenses, not one.

“Designated Computer” (DC): Where the product name contains the words “fixed,” “locked,” or “node locked,” and for all “Kepware” and “KepServerEx” products, such products are licensed to operate solely on the designated computer on which they are installed. It is not permitted to move Designated Computer licenses from one computer to another by means of installing such products on an external, portable or removable device (e.g., USB dongle, NAS, Router, memory stick, USB drive, external hard drive) or through other means.

“Designated Server” (DS): Each Designated Server product may only be used on the computer server that is designated by the Customer in connection with the initial installation of the product and that has one unique instance of the applicable installed product application. In the event a computer server is partitioned in any manner (physically, logically or otherwise), the reference in the preceding sentence to “computer server” shall mean each partition of such server, and such Designated Server product may only be used on one of such partitions.

There is a variation of the Designated Server model referred to as “Designated Server (per CPU)”. For these products, the license is limited to a server with only one central processing unit (CPU); an additional license is required for each additional CPU.

“Per Core” (PCO): For Per Core products, a license is required for each core of a processor within a system with which the applicable product is executed, as reported by the operating system running the applicable product. For example, if a device is executing PTC software that is licensed on a Per Core basis, assuming each device has two multi-core processors, each with two cores that all execute the software, four licenses would be required. Likewise, if the device had three single-core processors that all execute the software, three licenses would be required. If the operating system that runs the applicable product is within a virtual system (such as VMware) with two virtual cores allocated to the operating system running the applicable product, two licenses are required.

“Per Instance” (PI): For Per Instance products, one license is required for each instance of a system to which the applicable product connects. For example, if an adapter that is licensed on a Per Instance basis enables Windchill to connect to an ERP system and a CRM system, two licenses of such adapter will be required.

“Registered User” (RU): Registered User products may only be used by a single individual without regard to how often the person uses the license. A license is required for every such individual, regardless of whether the individual is accessing the Licensed Product directly or via an intermediate application. Shared passwords or log-in accounts are not permitted unless the licensing basis for the particular product below specifies to the contrary. The Customer may add and/or substitute from time to time new Registered Users as long as the aggregate number of Registered Users does not exceed at any point in time the number of licenses in effect at such time for that particular product and, provided further, that if a person who was previously a Registered User returns to Registered User status, a new license fee must be paid to PTC at PTC’s then current rates unless the licensing basis for the particular product below specifies to the contrary.

“Site License” (S): Products licensed on a “Site License” basis require a license for each Customer location at which such product will be used.

“Demo and Test”: Products licensed on a “demo and test” or “non-production” basis (or similar designation), such Licensed Software may not be used in a production environment.

Packages (P): The licensing basis for each component of a PTC product package shall be the same as if such component were being licensed separately, except that the components of each package may only be used with the base seat in the package. For example, the



Windchill PDMLink and Windchill ProjectLink Registered User Licenses bundled with the Creo Enterprise XE Package are Licensed on a Registered User basis and must be assigned in combination to a single Creo user.

Bundles (B): Each PTC Bundle contains several different PTC Licensed Products and the licensing basis for each such Licensed Product may differ from the other Licensed Products included in that Bundle.

LICENSE RESTRICTIONS COMMON TO MULTIPLE PRODUCTS

Subscriptions: A “Subscription” is a on-premise License type that includes a License for a term as specified in the product name, Quote, order agreement or other order documentation, and/or the invoice, and such License includes Support Services during such License Term at no additional fee.

Virtualization Technologies: Although in some cases it may be possible through the use of virtualization technologies to circumvent the license control mechanisms that PTC employs in order to enforce the above licensing schemes, or to circumvent the intent of such licensing schemes, such practices violate the Customer’s License Agreement with PTC. Without limiting the foregoing, Customers may not install or access Designated Computer licenses (also sometimes referred to as “node locked licenses”) on or through virtualization technologies.

Third Party Terms: Various PTC products contain or consist of technology from third parties. See the Schedule of Third Party Terms (available at <http://www.ptc.com/legal-agreements>) for additional restrictions and terms that apply to such third party technology.

Upgrades: For PTC software licensed as an upgrade from a previous version, the Customer must first be licensed for the software identified by PTC as eligible for the upgrade and Customer must be active on Support Services for such software at the time Customer purchases the relevant upgrade. After installing the upgrade, the software licensed as an upgrade replaces and/or supplements the product that formed the basis of the Customer’s eligibility for the upgrade and the Customer may no longer use the original software that formed the basis for the Customer’s upgrade eligibility.

Interoperability Tools/Toolkits. PTC interoperability tools (e.g., Pro/TOOLKIT, or J-Link, Pro/Web.Link and application programming interfaces) are provided solely for purposes of enabling the Customer (itself or with the assistance of a third party) to cause the Licensed Products to interoperate with the Customer’s other computer systems and programs. Customer shall not distribute to any third party all or any part of any such interoperability tool or use such interoperability tools to develop an integration for distribution to third parties. The foregoing does not apply to PTC’s MKS toolkit.

Batching. For license types based on numbers of users (e.g., Registered User, Concurrent User, etc.), a License is required for each individual who accesses such Licensed Product or the functionality or data contained therein, whether directly or through a web portal or other mechanism for “batching” or otherwise achieving indirect access to the Licensed Product or such functionality or data. Generic or shared log-ins are not permitted.

Home Use Licenses/Portable License Enabler Licenses:

If the Customer’s license is a “home use” license, such license is only for use within the home of an employee or contractor of the Customer who is a primary user of a separate non-home-use license of the same product. More information about home use entitlements and restrictions is located at <http://www.ptc.com/legal-agreements/support-documents>.

Perpetual Licenses

PTC does not have perpetual license models for most products. Where PTC does sell perpetual licenses, however, and such product includes components that are provided by PTC on a hosted or SaaS basis (e.g., Creo AR Design Share), PTC may discontinue providing such hosted components at any time.

Windchill and Service Intelligence:



The following use restrictions apply to the Business Reporting functionality in Windchill and in the Service Intelligence Product, depending on the license type:

- (i) Each license of Windchill includes a license to use the base Business Reporting functionality to: (a) select reports, view reports and set personal preferences (for languages, time zones etc.); and (b) run and schedule reports created by a person using Windchill Business Reporting Author, Service Intelligence Professional Author or Service Intelligence Advanced Business Author, or created by any of the means of report generation which are consistent with these use restrictions, interact with prompts, output the reports to other formats such as PDF and CSV, subscribe to a scheduled report, create and manage report folders and portal pages, personalize standard reports, and receive notifications, and (c) use the Business Insight to create interactive dashboards. One of these licenses may also be used for administration of the Business Reporting Software, with the additional permission to setup, deploy, configure and manage the Business Reporting software and components within the Customer's environment, use the Framework Manager to define and publish metadata, and in the case of Service Intelligence Administrators, to use Portal, Query Studio, Report Studio, Analysis Studio, Business Insight and Business Insight Advanced to author, publish, generate and view sophisticated and interactive reports, analysis, queries and dashboards.
- (ii) A "Windchill Business Reporting Author" or "Service Intelligence Professional Author" license allows for the same functionality as clause (i) above, except that, in addition, the Customer may permit the specified number of Registered Users to use the Business Insight Advanced, Query Studio and Report Studio module and functionality and to model metadata via the Framework Manager.
- (iii) A "Service Intelligence Advanced Business Author" license allows for the same functionality as clause (i) above, except that, in addition, the Customer may permit the specified number of Registered Users to use the Business Insight Advanced, Query Studio and Analysis Studio module and functionality and to model metadata via the Framework Manager.
- (iv) A "Windchill Business Reporting Monitor" license means the Customer may permit the specified number of Registered Users to use the Event Studio module.

The Customer is required to configure the Business Reporting functionality to ensure that each user will be restricted from using any reporting functionality other than that licensed, as specified above. The Business Reporting functionality is only permitted to be used only with PTC products and not independent thereof.



GEOGRAPHICAL RESTRICTIONS ON INSTALLATION AND/OR USE OF PTC PRODUCTS

Restriction on Installation Location. Except for “Global” licenses (as specified in the product name), all of PTC’s products are restricted such that they may only be installed in the country of purchase (referred to in the License Agreement as the “Designated Country”). Where Customer desires to change the country of installation, Customer is required to notify PTC and, where the list prices for such licenses are higher in the proposed new country of installation, uplift fees are required based on the difference.

Restrictions on User Location (Concurrent User Products). Except for “Global” and “Restricted Global” licenses, PTC products that are licensed on a Concurrent User basis may only be used by persons physically located in the country where the products are installed, and all of the software components shipped as part of that product (for example, client code and license server) may only be installed in the Designated Country. However, where a person who is normally located in that country is traveling abroad, that person can “borrow” the license for a limited period of time (for most products two weeks), during which time period such license is not available on Customer’s network. Users who are not employees of the Customer may use PTC products licensed on a Concurrent User basis only while physically located at a Customer site. **THE RESTRICTIONS IN THIS PARAGRAPH APPLY ONLY TO CONCURRENT USER PRODUCTS, NOT TO PTC PRODUCTS THAT ARE LICENSED ON A DIFFERENT BASIS THAN CONCURRENT USER.**

Global/Restricted Global Licenses.

Global Licenses. A “Global” License allows the Customer to install, operate and use such Licensed Product at any of the Customer’s site(s) throughout the world, notwithstanding any restrictions in the License Agreement in relation to limiting use of Licensed Products to the country of installation, but subject to compliance with all applicable export laws and regulations.

Restricted Global Licenses. A “Restricted Global” License allows the Customer to install, operate and use such Licensed Product at any of the Customer’s site(s) located in the Designated Country and/or in any Permitted Country, notwithstanding any restrictions in the License Agreement in relation to limiting use of Licensed Products to the country of installation. “Permitted Countries” means China, India, Russia, the Czech Republic, Poland, Hungary, Malaysia, South Africa, Israel, Mexico, Brazil, Argentina, and Romania.



LICENSING BASIS TABLES

Creo and Other MCAD and Simulation Products

Licensed Product Name	Licensing Basis	Licensed Product Name	Licensing Basis
Creo Family of Products (except as noted)	Concurrent User	Creo Elements/Direct Family of Products (except as noted)	Concurrent User
Creo Extensions	Concurrent User or Designated Computer (as designated in the part number)	Creo Elements/Direct Modeling Personal Edition	Registered User (except that, after this Licensed Product is assigned to a Registered User, the License may not be re-assigned to any other user even if the original Registered User ceases to be employed by the Customer)
Creo Application Programming Toolkit	Registered User	Creo CADD5	Concurrent User
Creo View	Registered User or Concurrent User	Creo View Express	See note (1) below
Creo View Adapters	Designated Server or Registered User	Creo Illustrate	Concurrent User, unless the product name includes: (i) "Locked", in which case it is Designated Computer, or (ii) "Registered User", in which case it is Registered User, or "Add On", in which case it is License Locked.
Creo View Toolkits	Per Instance	SD/Fast	Designated Computer

(1) Creo View Express: PTC makes Creo View Express available for download free of charge on www.ptc.com. Notwithstanding anything to the contrary in the License Agreement, Customer may embed Creo View Express in products Customer makes available to its customers and thereby distribute Creo View Express to such customers.



PTC Mathcad and Arbortext Products

Licensed Product Name	Licensing Basis
PTC Mathcad	<p>Concurrent User or Designated Computer, based on the name of the product and/or as shown on the PTC Quote</p> <p>Student Edition is always Registered User and notwithstanding anything to the contrary elsewhere in this document, may not be re-assigned to any other user even if the original Registered User ceases to use the product.</p> <p>Mathcad Express is limited to usage for personal purposes, and may not be used to benefit any business or for any commercial purposes or for any business purposes.</p>

Arbortext Products

Licensed Product Name	Licensing Basis	Licensed Product Name	Licensing Basis
Arbortext Family of Products	Concurrent User (except as noted below)	Arbortext IsoView Distribution Kit	Site License (1)
Arbortext Content Delivery (a/k/a InService)	A base license is required on a Designated Server basis (which includes one production server and an additional server for each of development and QA purposes). A Viewer license is also required for each Concurrent User accessing content published from the associated base license (or alternatively, a Site Access Viewer license can be purchased instead of the Viewer licenses, which allows for unlimited number of Concurrent Users accessing content published from the associated base license).	Arbortext Publishing Engine	Designated Server (per CPU)

(1) Arbortext IsoView Distribution Kit: Notwithstanding anything to the contrary in the License Agreement, a Distribution Kit License of the Arbortext IsoView Licensed Product permits the Customer to: (i) use Arbortext IsoView in a single building or group of buildings that share a common physical address to develop Interactive Electronic Technical Manuals (“IETM”) or a software application that must have significant additional functionality to the functionality of the Licensed Products and/or significant additional and primary content (e.g., an IETM) (“Application”), and (ii) sublicense to Customer’s end-users, without the right to further sublicense and subject to the terms of this paragraph, the applicable installation program files and included runtime components, as bundled in an IETM or other significant content or an Application, solely for use in connection with such IETM/significant content or Application. The right to sublicense Customer’s end-users shall not apply unless an Application has significant additional functionality and significant additional and primary content. If Customer installs such installation program files on Customer’s webpage(s) for presentation of illustrations such installation programs files must be protected by requiring the use of a restricted password. Any such sublicense may only be granted to Customer’s end users who agree to abide by all of the terms and conditions of the License Agreement with respect to such use. Customer shall not remove any proprietary notices or labels contained in the Arbortext IsoView Licensed Products and shall include a valid copyright notice with each copy of the IETM and Application. If Customer uses or distributes runtime components or their copies as part of the Arbortext IsoView installation files, Customer shall indemnify and hold PTC and Microsoft Corporation harmless from all and any claims caused by this distribution and use by its end-users.



SLM/Servigistics Products

Licensed Product Name	Licensing Basis	Licensed Product Name	Licensing Basis
<u>Third Party Products (1)</u> Informatica Intellicus Google Maps	Each license entitles Customer to use Informatica on up to 8 cores Designated Server or Concurrent Report Limited (2) Unlimited geo-coding and 250,000 annual page views	<u>Service Knowledge and Diagnostics</u> <ul style="list-style-type: none"> • Servigistics Service Knowledge and Diagnostics - includes 5 Advisor Studio and 5 Advisor for Analytics* • Servigistics Advisor for Self Service - B2C • Servigistics Advisor for Contact Center • Servigistics Advisor for Field Service • Servigistics Advisor Offline • Servigistics Advisor for Analytics - 5 Pack • Servigistics Advisor Studio • Servigistics Advisor Service Session for Call Center • Servigistics Advisor Service Session for Field Service <p>* For Subscription offerings, Servigistics Advisor Studio and Advisor for Analytics are included in the Site License</p>	Package Site License Registered User

The Service Parts Management family of products are licensed based on the following two models

1. If the Quote specifies “PMI” as the licensing basis for this product, in such case the license is limited by the value of inventory that is included in the software (using the values assigned by the Customer as specified in the software and consistent with the values of such inventory as stated in the company’s audited financial systems) as of the date the software is first implemented for or by Customer (the “Baseline Value”). It is sold in blocks of US\$1 million (or such other currency as may be specified in the Quote), with each quantity unit ordered representing US\$1 million of Customer inventory. Additional restrictions (e.g., geographic, divisional, etc.) may be specified in the order documents. Customer will be required from time to time upon request to inform PTC of the value of the inventory included in the software. All parts, at all locations (parts times locations) input to the SPM system is considered inventory (e.g., forecasted, optimized, supply/demand planned, repaired, balanced, etc) regardless of the condition of the inventory (e.g., on hand new, on hand fixed, on hand bad, on order, in return, in repair). If the value of the inventory managed in the software drops below the Baseline Value, Customer shall nonetheless be required to license at least the Baseline Value. If the value of the inventory managed increases above the Baseline Value, Customer shall be required to license the excess amount. In the event Customer acquires other businesses and desires to manage the inventory of such other businesses using the software, Customer shall notify PTC of such fact and the parties shall negotiate in good faith an increase to the Baseline Value (and corresponding fees).
2. If the Quote refers to “PXL” as the licensing basis for a product, the calculation of the number of PXLs required shall be determined by multiplying the number of part numbers in the software times the number of locations in the software as of the date the software is first implemented for or by Customer (the “Baseline Value”). For example, without limiting the foregoing, if Customer includes in the software 10,000 part numbers and 4 locations, Customer will be managing 40,000 “PXLs” and would need to purchase a quantity of at least 40,000 PXLs. If the number of PXLs in the software drops below the Baseline Value, Customer shall nonetheless be required to license at least the Baseline Value. If the number of PXLs in the software increases above the Baseline Value, Customer shall be required to license the excess amount. In the event Customer acquires other businesses and desires to manage the inventory of such other businesses using the software, Customer shall notify PTC of such fact and the parties shall negotiate in good faith an increase to the Baseline Value (and corresponding fees).



Service Parts Pricing is licensed based on the annual Customer revenue from the sale of service parts that are being managed by the software. It is sold in blocks of US\$1 million (or such other currency as may be specified in the Quote), with each quantity unit representing US\$1 million of annual Customer revenue. Additional restrictions (e.g., geographic, divisional, etc.) may be specified in the order documents. Customer will be required from time to time upon request to inform PTC of the annual revenue from the inventory included in the software. Additional restrictions (e.g., geographic, divisional, etc.) may be specified in the order documents.

Warranty & Contract Management	Designated Server (4)	Service Center	Designated Server
Warranty Analytics (3)	Registered User (4)	iService	Concurrent User
Warranty products	Concurrent User (4)	iSupport	Concurrent User
Warranty Web Access	Designated Server (4)	iParts	Concurrent User

(1) The Servigistics third party products are subject to restrictions and terms and conditions that PTC is required to flow down to Customer, as set forth on the PTC Schedule of Third Party Terms available at <http://www.ptc.com/legal-agreements>. PTC hereby assigns to Customer all assignable warranties and indemnities granted to PTC by the third party providers of the applicable third party products as set out in such third party terms.

(2) “Concurrent Report Limited” means that the Product is limited in how many reports can be generated at a given time. Thus, for example, if Customer purchases the “100 Concurrent Requests” of this Product, only one hundred reports can be generated at any given time.

(3) The Service Intelligence bundle includes 1 Administrator, 2 Advanced Business Authors and 1 Professional Author. Note that additional Advanced Business Authors can also be purchased under this product name.

(4) See page 3 of this document for additional terms (4) relating to the Service Intelligence functionality in PTC’s Warranty products.



Windchill Products and ThingWorx Navigate (1) (7) (8)

Licensed Product Name	Licensing Basis	Licensed Product Name	Licensing Basis
Windchill Family of Products (except as noted)	Registered User	Windchill FRACAS, FMEA, FTA, Markov, Maintainability, LCCs, and Prediction	Concurrent User
Windchill Enterprise Systems Integration (except as noted)	Designated Server	Windchill FlexPLM	Registered User (2)
Windchill Enterprise Systems Integration Adapters	Per Instance (4)	PTC's Retail IoT ADK (Application Developer Kit)	Registered User (3)
Windchill Info*Engine Adapters	Per Instance	Windchill Platform Structures	Active Daily User (ADU) (6)
UDI Solution	UDI (5)	Windchill R&R ALERT, R&R AUDIT, and R&R PLM Integration	Designated Server

(1) Integrations. If the Customer creates an interface or otherwise enables real time or automated access between a Windchill implementation and a system of non-PTC software, all users in the Windchill system must have either a ThingWorx Navigate View, ThingWorx Navigate Contribute, Windchill Base, Windchill Advanced, or Windchill Premium license.

(2) Windchill FlexPLM

FlexPLM "Light User" licenses may only be assigned to users who do not have substantial duties within the following organizations or functional areas within the Customer's organization: System Administrators, Technical Designer, Designer, Fabric Development, Color Development, Fit Specialist, Merchandising, Product Quality, and Sourcing ("Light Users"). The Customer may not assign (or reassign) Light User licenses to persons who are not Light Users unless and until Customer pays the applicable upgrade fee(s) for software and Support Services.

FlexPLM "Supplier Licenses" or "External User Capacity" licenses may be assigned only to users who are vendors, third parties and others external to the Customer and its affiliates ("External Users"). External User licenses may be reassigned to another External User at no additional license fee, except that an External User license may not be used by more than one External User during any calendar month.

Registered Users of FlexPLM also receive entitlements to use certain role-based applications (e.g., the FlexPLM TechPack Access App). These applications are limited to use by Registered Users of FlexPLM and may only be used for the following purposes:

1. to execute applications to view and print information from solutions sold by PTC and delivered through the components bundled with the role-based applications.
2. to install the ThingWorx server for the sole purposes of accessing FlexPLM data as applicable to the role-based applications and configuring details required for the role-based applications.

If the Customer creates (or engages a third party to create) an integration between a production FlexPLM system and a system of non-PTC software or otherwise enables data to be passed between a production FlexPLM system and a system of non-PTC software, then the Customer must purchase the ThingWorx Retail Connector (SPN-2253-F). The ThingWorx Retail Connector (SPN-2253-F) provides integration of FlexPLM to one (and only one) system of non-PTC software and includes the right to install the ThingWorx OEM Embedded License for Apps (SPN-56283-F) for the sole purpose of enabling the integration of FlexPLM and one system of non-PTC software. No other use of ThingWorx is permitted. The TRC Additional System Connection (SPN-2254-F) authorizes the use of the ThingWorx Retail Connector to integrate FlexPLM with one additional system of non-PTC software, beyond that included through the licensing of SPN-2253-F as defined above. There is no limit to the number of licenses of SPN-2254-F that can be acquired once SPN-2253-F is licensed.



There are also the following FlexPLM offerings that are specific to the consumer products industry. For each offering, only the functionality listed below may be used.

FlexPLM for Consumer Products – Line Management	FlexPLM for Consumer Products – Product Spec Management	FlexPLM for Consumer Products – Sourcing and Costing Management
<p>Enables collaboration between marketing/product management user roles and design / development / engineering teams by providing abilities to manage product line plans and communicate these plans to others. The specific features that may be used in this offering are:</p> <ul style="list-style-type: none"> • Plan and placeholder management • Color, finish, and palette management • Ability to create & manage products and SKUs • Image management • Line board creation • Season or program management • Calendar management 	<p>Enables design, development, and engineering teams to manage information relevant to a product’s specifications. The specific features that may be used in this offering are:</p> <ul style="list-style-type: none"> • CAD and Windchill Part associations to Products • Materials definition and management • Supplier management • Specification management - including BOMs and Packaging and Labeling 	<p>Provides the ability to assign suppliers as finished goods manufacturers and derive finished goods costs for cost and margin analysis. The specific features that may be used in this offering are:</p> <ul style="list-style-type: none"> • Product sourcing • Product costing – including RFQ and commitment management • Product testing • Supplier scorecards

(3) ADK. PTC’s Retail IoT ADK (Application Developer Kit) product may be used by Customer only to connect to PTC’s FlexPLM product to other enterprise systems (e.g., Oracle ERP, SAP, CRM systems, etc.). It may not be used to access data from devices – which can include but is not limited to connected products, wearables, production machinery, and physical assets – and any edge servers or services that devices are connected to. It also may not be used to connect to manufacturing systems, processes, and/or operations belonging to the Customer’s internal production facilities or the Customer’s suppliers’ production facilities.

(4) ESI. Each Windchill product which includes “Enterprise Systems Integration” or “ESI” in the name of the product includes one instance of ESI. Customer may purchase additional instances of ESI separately, including licenses for non-production and development use.

(5) UDI Solution. For PTC’s UDI Solution, two different licenses are required – core system licenses and agency submittal licenses:

- Core system licenses enable management, replication and approval of UDI data.
- Agency submittal licenses enable UDI regulation compliant submission, as well as submission retention and monitoring and auditing capabilities, and also include user training specific to UDI usage.

Each UDI license covers up to the number of Devices indicated in the product name. Thus, for example, without limiting the foregoing, if Customer has 30,000 actively-marketed Devices registered with the U.S. FDA and 10,000 actively-marketed Devices registered with the UK Medicines and Healthcare products Regulatory Agency, then in that case:

- If all 10,000 Devices registered with the in the UK are a subset of the 30,000 registered in the U.S., Customer would need 3 “10,000 Device” core system licenses and 16 “2,500 Device” agency licenses (12 for the U.S. FDA and 4 for the UK Medicines and Healthcare products Regulatory Agency) (assuming the 10,000 Devices registered).
- If there is no overlap, then Customer would need 4 licenses of the core system and 16 of the agency licenses.

A “Device” means a product make or model that Customer has registered with any regulatory agency and that is being actively marketed by Customer.

(6) Windchill Platform Structures. “Active Daily User” means that the product is licensed on the basis of the number of unique users who authors and manages Platform Structures content at any time during a 24 hour calendar day. For example, if a user authors or modifies Platform Structures content 3 times on a Monday and 2 times on the following Friday, then the user is counted as a single active user on both Monday and Friday only. The 24 hour period is defined using the time zone set for the connected Windchill server.



(7) Windchill Profiles. Various Windchill products are role-based (e.g., “author”, “contributor”, etc.). Different roles are entitled to use different functionality in such products, and it is necessary for the Customer’s Windchill administrator to assign users to the correct roles corresponding to the licenses purchased by the Customer.

(8) Enterprise PLM Packages and Enterprise Add-On Applications: The pre-requisites for the Enterprise PLM Add-On Applications are as follows:

License	Pre-requisite(s)
Windchill Creo Data Management and Visualization Windchill Multi-MCAD Data Management and Visualization Essentials Windchill Multi-MCAD Data Management and Visualization PTC Windchill Audit Management Windchill QMS - Document Control Windchill QMS - Med Dev Surveillance and Corrective Action	Windchill Base, Windchill Advanced, or Windchill Premium
Windchill Service Parts Information & Instructions Windchill QMS - Medical Device Design Control PTC UDI Solution Windchill Regulatory Hub	Windchill Advanced or Windchill Premium
Windchill Base-to-Advanced Add-on	Windchill Base
Windchill xBOM Management	Windchill Advanced
Windchill Manufacturing Process Plans and Instructions	Windchill Advanced plus Windchill xBOM Management; or Windchill Premium
Windchill Supplier Management	Supplier Management must be added to all Windchill Advanced users in the Windchill system if Supplier Management is implemented.
Windchill Part Classification	Parts Classification must be added to all Windchill Base and Windchill Advanced users in the Windchill system if Parts Classification is implemented.
Windchill Secure Collaboration	Secure Collaboration must be added to all Windchill Base users in the Windchill system if Secure Collaboration is implemented
Windchill Aerospace & Defense Module	Windchill Aerospace & Defense Module must be added to all Windchill Base, Windchill Advanced, and Windchill Premium users in the Windchill system if the Aerospace & Defense Module is implemented.
Windchill Platform Structures Management” ADU license	ThingWorx Navigate View, ThingWorx Navigate Contribute, Windchill Base, Windchill Advanced, or Windchill Premium. The PTC Windchill Platform Structure ADU license must be available for any user (Authoring or Viewing) participating in programs using configurable parts when they access Platform Structures content.

ThingWorx Navigate

The licensing basis for ThingWorx Navigate View, ThingWorx Navigate Contribute, ThingWorx Connected PLM and ThingWorx Connected PLM View is Registered User or Active Daily User or Designated Computer, as specified in the Quote.

“Active Daily User” means that the product is licensed on the basis of the number of unique users who access a ThingWorx Navigate application at any time during a 24 hour calendar day. For example, if a user accesses a ThingWorx Navigate application 3 times on a Monday and 2 times on the following Friday, then the user is counted as an active user for Monday and Friday only. The 24 hour period is defined using the time zone set for the connected ThingWorx server.



Customers using ThingWorx Navigate licenses with Windchill products must associate all users and groups entitled to use the Navigate licenses with the Windchill License associated with the license. For example, all users for whom a ThingWorx Navigate View license is purchased must be a member of a group associated with a PTC View and Print Only License Profile.

The ThingWorx Navigate View license grants the Customer the right:

1. to view information through the components bundled with the ThingWorx Navigate View apps.
2. to install the ThingWorx server for the sole purpose of delivering ThingWorx Navigate components. The application components include only the gadgets, widgets, shapes and templates bundled with the ThingWorx Navigate apps.
3. to use the ThingWorx Composer and administration capabilities of ThingWorx to configure the application components (Widgets, shapes and templates) bundled with the ThingWorx Navigate apps, specific to the included ThingWorx Navigate View apps.
4. to directly log into the Windchill application with view privileges limited to the following basic Windchill capabilities:
 - a. ability to perform full-text searches using the Windchill search engine to locate Windchill managed objects via matches against keywords found in metadata and content data
 - b. the ability to perform database searches to locate Windchill managed objects via matches against metadata
 - c. the ability to traverse cabinet/folder information classification structures to find Windchill-managed objects
 - d. for any managed object found via any of the foregoing methods, the ability to view a "Properties" page that outlines metadata properties of the Windchill-managed object and provides the ability to download non-CAD file content should any content exist as part of the object
 - e. the ability to print objects
 - f. the ability to open viewables in Creo View and to view and measure the viewables in 3D but not to mark up the viewables

Customer may not use any functionality not included in the list above. For the sake of clarity, without limitation, the ThingWorx Navigate View license specifically does not authorize Customer:

1. to create information in solutions sold by PTC.
2. to use the ThingWorx platform integration capability to:
 - a. export information from one PTC solution to another system (including a file system)
 - b. acquire information from non-PTC solutions (a separate ThingWorx Connected PLM license is required for this purpose)
 - c. create or edit information in a system
 - d. build integrations with systems that require components other than those bundled with the ThingWorx Navigate apps.
3. to use the ThingWorx platform to create new components (gadgets, widgets, shapes or templates) in addition to those bundled with the ThingWorx Navigate apps.
4. to use the ThingWorx platform to create new applications that include components (widgets, shapes and templates) other than those bundled with the ThingWorx Navigate apps.
5. to directly access ThingWorx or the PTC Solution Extension layers which are used by the ThingWorx Navigate apps to communicate with solutions sold by PTC.
6. to use the ThingWorx platform to create applications that directly or indirectly acquire information from and/or control physical Assets (for example, physical devices, equipment, and products). A separate ThingWorx Platform license is required to develop applications for physical asset connectivity
7. to use the following Windchill capabilities:
 - a. the ability to participate in workflows and lifecycle action items
 - b. the ability to upload content files or to modify metadata in any fashion
 - c. the ability to create or modify data

ThingWorx Navigate Contribute

This license supports all the capabilities included under a ThingWorx Navigate View license as well as those exposed in the PTC Contribute License Profile.

ThingWorx Connected PLM

This license entitles a user to use the ThingWorx Composer and ThingWorx Mashup Builder to create custom apps and connect to PTC and third party enterprise systems to both view as well as to create and update information in the connected systems. Each user of the custom app must have the requisite view, create and update privileges to the content of connected system that is exposed in the custom authoring app. For example, each user who uses a custom Navigate app that is connected to Windchill must have this license in addition to a base ThingWorx Navigate View or Contribute license (or Windchill or Integrity base license), depending upon the capabilities of the custom app.



The ThingWorx Connected PLM license may be used by Customer to connect to enterprise systems (e.g., Oracle ERP, SAP, CRM systems, etc.) and to connect to PTC's Windchill and Integrity products. It may not be used to access data from devices – which can include but is not limited to connected products, wearables, production machinery, and physical assets – and any edge servers or services that devices are connected to. It also may not be used to connect to manufacturing systems, processes, and/or operations belonging to the Customer's internal production facilities or the production facilities of the Customer's suppliers. ThingWorx Connected PLM has a prerequisite of one Connected PLM Base per ThingWorx server instance.



Application Lifecycle Management Products

Codebeamer Products

Licensed Product Name	Licensing Basis
Codebeamer - collaboration	Registered or Concurrent User (1,2)
Codebeamer (previously Codebeamer LM)	Registered or Concurrent User (1,2)
Codebeamer - advanced	Registered or Concurrent User (1,2)
Codebeamer - premium	Registered or Concurrent User (1,2)
Codebeamer – Windchill SCM dual-use addon	Registered or Concurrent User (1,2)
Codebeamer Avionics DO-178C DO-254	Site License
Codebeamer Pharma GAMP® 5 Template	Site License
Codebeamer ISO 9001:2015 Template	Site License
Codebeamer Medical Audit and CAPA Management Template	Site License
Codebeamer Medical Software Engineering Template	Site License

Licensed Product Name	Licensing Basis
codebeamer X / LM	Registered or Concurrent User (1,2)
codebeamer X / RM	Registered or Concurrent User (1,2)
codebeamer X / TM	Registered or Concurrent User (1,2)
Codebeamer X collaboration	Registered or Concurrent User (1,2)
Codebeamer RM	Registered or Concurrent User (1,2)
Codebeamer TM	Registered or Concurrent User (1,2)
Codebeamer DM	Registered or Concurrent User (1,2)
Codebeamer Review Hub	Registered or Concurrent User (1,2)
Codebeamer Automotive ISO 26262:2018 & ASPICE Template	Site License
Codebeamer Tool Validation Kit	Site License

(1) Notwithstanding anything to the contrary in the License Agreement, use of Codebeamer software is not restricted to persons located in the Designated Country.

(2) For Codebeamer Concurrent User products, the Customer is limited to allowing a maximum of seven individuals to use each license (but no more than one individual at any given time). For example, if Customer has a team of 80 people who need to Codebeamer Concurrent User licenses, Customer must have a pool of at least 12 licenses to support such team.

Windchill Systems and Software Engineering Products (1)

Licensed Product Name	Licensing Basis
Windchill Model Based Systems Engineering	Concurrent User
Windchill Software Modeling	Concurrent User
Windchill MBSE Code Generator Add-on	Concurrent User
Windchill Process Director	Concurrent User
Windchill Process Consumer	Concurrent User
Windchill Process Check	Concurrent User

Licensed Product Name	Licensing Basis
Windchill Requirements Connector	Concurrent User
Windchill Modeler	Concurrent User
Windchill Asset Library	Concurrent User
Windchill Lifecycle Manager	Registered User or Concurrent User (as specified in the product name), except that for the Concurrent User version, each Concurrent User license entitles Customer to four Registered User eLearning licenses



Windchill Requirements and Validation	Registered User or Concurrent User (as specified in the product name), except that for the Concurrent User version, each Concurrent User license entitles Customer to four Registered User eLearning licenses ⁽²⁾	Source Code Management (previously GSD)	Registered User or Concurrent User (as specified in the product name), except that for the Concurrent User version, each Concurrent User license entitles Customer to four Registered User eLearning licenses ⁽³⁾
Implementer Products	Designated Server based on the computing power (a/k/a processor group) of the server on which the products are installed		

(1) Notwithstanding anything to the contrary in the License Agreement, (a) use of Windchill Systems and Software Engineering software is not restricted to persons located in the Designated Country and (b) for the Registered User version of these licenses Customer may not substitute one Registered User for another, except that a Registered User who ceases to be employed by Customer or who permanently ceases to use the license may be replaced with another Registered User.

(2) Requirements and Validation – Limitations of Use

The Requirements and Validation license allows users to use only the following functionality:

- Lifecycle Manager:
 - Management and change of requirements and specifications
 - Management and change of test cases, steps, sessions, and results
 - Baseline, review and approval processes for requirements, specifications, and tests
 - Validation and verification of requirements, as understood by traditional industry practices
 - Administer system configuration, delivery, and deployment
- Requirements Connector:
 - Exchange requirements between Lifecycle Manager and IBM Rational DOORs or standard file exchange format (ReqIF and RIF)
 - Administer system configuration, delivery, and deployment

Users are not allowed to use any functionality not listed above. For example, without limitation, the following functionality is not authorized to be used:

- Lifecycle Manager:
 - Software change configuration management
 - Software build management
 - Issue or defect management
 - Agile or other software process management offerings
- Requirements Connector:
 - Exchange requirements between IBM Rational and IBM Rational DOORs or standard file exchange format (ReqIF and RIF)
- Windchill integration:
 - Any offerings related to Windchill Integrations to Embedded Software
 - Any integrations related to software (source code, build artifacts) or BOM configurations
 - Any related change management processes between Windchill and Lifecycle Manager

The Customer’s system administrator is responsible for configuring the above software so that only the included functionality is visible/accessible to the user. Instructions for such configuration are provided by PTC.

(3) Source Code Management (previously GSD) – Limitations of Use

Source Code Management includes functionality of the Requirements Connector product, users are only authorized to use the following Requirements Connector functionality:

- Requirements Connector:
 - Exchange requirements between Lifecycle Manager and IBM Rational DOORs or standard file exchange format (ReqIF and RIF)
 - Administer system configuration, delivery, and deployment



Users are not authorized to use the following functionality of Requirements Connector:

- Requirements Connector:
 - o Exchange requirements between IBM Rational and IBM Rational DOORs or standard file exchange format (ReqIF and RIF)



ThingWorx Core Products

PTC has the following licensing models for ThingWorx core products: (i) the ThingWorx Smart Connected Products model, (ii) the ThingWorx Smart Connected Operations model, and (iii) the ThingWorx OEM Program. Each of these licensing models is described below. Except under the ThingWorx OEM Program, under all of the other models, it is not permitted to: (a) use the ThingWorx Licensed Products in order to develop applications that Customer makes available for use by third parties (except under the ThingWorx SCP model to make Customer’s physical products internet-enabled), or (b) allow the Customer’s customers to install the Licensed Products either on such customers’ premises or at third party premises for such customers.

ThingWorx products will be shipped to the Customer location set forth in an Order or Quote, but Customer may also install, operate and use such ThingWorx products at any of the Customer’s site(s) throughout the world, notwithstanding any restrictions in the License Agreement in relation to limiting use of Licensed Products to the country of installation, but subject to compliance with all applicable export laws, restrictions and regulations. Customer further agrees that it will be responsible for all taxes, duties and other fees and amounts attributable to the use of the ThingWorx products at locations other than the install location set forth in an Order or Quote.

“ThingWorx Active-Active Cluster” capability was released with ThingWorx 9.0. ThingWorx Active-Active Clusters allows customers to “pool” together multiple servers (nodes) in a cluster by sharing the combined resources of the clustered servers. This “ThingWorx Active-Active Cluster” feature allows customers to horizontally scale ThingWorx by sharing computing resources and/or to create redundancy by configuring the multiple servers to be mirror-images of each other across a shared database environment.

ThingWorx Smart Connected Products (“ThingWorx SCP”)

The ThingWorx SCP model allows Customers to license the IoT Platform for connecting Customer’s products and for building and running IoT applications. The licensing basis for each Licensed Product in the ThingWorx SCP model is detailed in the table below:

Licensed Product Name	Licensing Basis
ThingWorx SCP Platform Edition (1)	SCP
SCP Registered Users (2)	RU
Assets (3)	IoT
ThingWorx Analytics (4)	Per Core
Software Content Management	License required for each Production Instance (as defined below in note 1 below)
Additional Production Limited Instance (5)	SCP
SCP Runtime App (6)	SCP

(1) There are different ThingWorx SCP Platform “Editions”: Premium Edition, Professional Edition, and Enterprise Edition. Each ThingWorx SCP Platform Edition includes one Instance for production usage and an unlimited number of Instances for non-production use only (except where PTC is hosting the Licensed Products for Customer, in which case the entitlement is one non-production Instance, unless additional hosted non-production environments are purchased). Each ThingWorx SCP Platform Edition includes a designated number of SCP Registered Users, Assets, and ThingWorx SCP Platform Edition-specific features as set forth in the table below. The ThingWorx SCP Platform can be installed on the Customer’s physical premises or at the Customer’s designated hosting provider, if not hosted by PTC. An “Instance” means a dedicated deployment of application servers in a ThingWorx Active-Active Cluster, all of which are located in one physical location and a shared database. Each ThingWorx SCP Platform Edition includes the “ThingWorx agents” or “Edge Microservers” and a ThingWorx SDK used by the Customer to add connectivity into the Customer’s run-time applications. The “ThingWorx agents,” “Edge Microservers,” and Customer’s applications created with a ThingWorx SDK are unlimited and distributable with connected products, but only for use with ThingWorx products.



	Premium Edition	Professional Edition	Enterprise Edition
Assets (included)	50	75	100
SCP Registered Users (included, more may be purchased separately)	5	5	5
View-Only SCP Users	Included		
ThingWorx Analytics	Not available	8 cores included	16 cores included
eLearning (Registered Users)	1 license included with each SCP Registered User		
ThingWorx Foundation	Included		
Technical Support	Silver	Gold	Gold (Gold+ may be purchased as an upgrade)
Software Content Management	Not available	Not included	Included
ThingWorx Flow	Included		
ThingWorx Active-Active Clustering	Included (9.0+)		
Asset Advisor/SCP Accelerator	Included		

(2) “SCP Registered User” (designated as “IoT”) means a log-in ID that enables access to the ThingWorx Platform directly or via an intermediate application for use by a person who is authorized by the system administrator to develop mashups, applications and/or dashboards using the Licensed Product. This licensing basis is a variant of the Registered User licensing basis. Users are counted on an individual basis, not on a concurrent basis.

“View-Only SCP Users” are users of the Licensed Product that are authorized only to consume outputs from the ThingWorx Platform. View-Only SCP Users may not be authorized to, and must not, develop or modify mashups, applications or dashboards. View-Only SCP Users may have a log-in, or might be someone (e.g., a service desk employee) who accesses data through another system or through a shared log-in or screen. View-Only SCP Users are unlimited and included with the ThingWorx SCP Platform.

(3) “Asset” (designated as “IoT”) (also sometimes referred to in the product itself or elsewhere as a “Device” or a “Thing” or a “Remote Thing”) means a sensor, device, machine, system, web service, etc. that is modeled (represented) and/or registered as an asset (or “device” or “thing” within the Licensed Product) or any separately defined part of the foregoing if it is being treated as a separate asset within the software. For example, without limitation, an Asset could be a brake press, industrial dryer, another computer system, or a set of individual components within those machines if modeled or registered as a separate asset in the software), etc.

“Simple Narrow Band Asset” (NB) is a class of Asset (SCP section 3) that runs on either an industry standard Low Power Wide Area Network (LPWAN) or 5G network with the following additional constraints: No remote access from ThingWorx into the asset, No Software Content Management (SCM) capability, and no file transfer capability.

(4) “ThingWorx Analytics” enables machine learning capabilities and other analytic services for the Internet of Things. ThingWorx Analytics may be licensed for use in conjunction with the ThingWorx SCP Platform Professional and Enterprise Editions, only. ThingWorx Analytics is licensed on a Per Core basis. Analytics Server may be run in single-server or distributed mode. In distributed mode, only CPU cores running ThingWorx analytics code (e.g., API interface, analytics workers) require a Per Core license.

Any installed component that delivers analytic computational functionality as indicated in the table above requires a ThingWorx Analytics Per Core license for each physical or virtual CPU core as reported by the operating system on which such component is installed. If the Customer exceeds the compute capacity of the included ThingWorx Analytics cores, the Customer can purchase additional core licenses for additional compute capacity on any of instance running components that deliver computational functionality.

(5) The Additional Production Limited Instance allows a Customer to deploy an Instance on multiple servers with a corresponding shared database that are not located at one physical location. A license of the Additional Production Limited Instance is required for each such non-collocated server. Where there are multiple databases, however, an additional SCP Platform Edition must be purchased for each such Instance.

(6) “SCP Run-time license” is a ThingWorx Platform license that enables a customer to run their application or solution on a remote device. This Runtime License enables the customer’s application or solution to work remotely, but restricts further development in the field.

ThingWorx Smart Connected Operations (“ThingWorx SCO”)



The ThingWorx SCO models allow Customers to license the IoT Platform for connecting and monitoring Customer’s internal manufacturing systems, processes, and/or operations related to the production of Customer products. There are several SCO Solutions models, which are based primarily on solutions/use cases sold per Site, plus SCO Registered Users and in some cases assets. Registered User

SCO Solutions Models

Definitions Applicable to SCO Solutions Models

- An “Application Production User Interface” is the point at which the human end-user interacts with a computer, website, or application, in a single unified screen. Every unique combination of user interface elements, components, mashups etc., is considered its own single Application Production User Interface. The application may be made up of several Application Production User Interfaces, linked together to solve a business problem.
- “Connected Asset” is production equipment (assets) used by Customer to produce and deliver materials during the manufacturing process. The asset may include one or multiple sensors, devices, machines, system, web service, etc. that are represented (modeled or configured) as an asset (or “device” or “thing”). For example, without limitation, a Connected Asset could be a brake press, industrial dryer, another computer system, or a set of individual components within those machines if represented (modeled or configured) as a separate asset in the software. Connected Asset licenses are required in Process Manufacturing for any Connected Assets that are represented or visualized in the Licensed Product.
- A “Custom Application” is a software application not created by PTC that has been built for a single business use case for end users, addressing the Customer’s needs and requirements. A Custom Application is developed using the ThingWorx platform technology and made up of a combination of backend components, services, mashups, and up to 10 Application Production User Interfaces per Custom Application. Any Custom Applications requiring more than 10 Application Production User Interfaces will require the purchase of a second Custom Application license.
- “Process Manufacturing” is manufacturing that mixes or combines ingredients utilizing a recipe, blend, or formula to create a chemical, physical or compositional change resulting in finished goods (indistinct units). The materials that make the finished product are typically in varying units of measurement, and can be transformed (e.g., gas, liquid, oil, powder) into a final product which cannot be taken apart into its original forms. Process manufacturing relies on the flow of sequential steps, with the completion of one step leading to the start of the next step. Examples include, without limitation, the manufacturing of food items, beverages, chemicals, pharmaceuticals, plastics, and oil & gas. Examples of manufacturing that is not process manufacturing include, without limitation, the manufacturing of things such as turbines, furniture, appliances, cars, nuts, bolts, smart phones, and generators.
- “SCO Registered User” means a person who accesses the ThingWorx Platform directly or via an intermediate application developed on the platform by PTC, customer, or partner. Every person who views or accesses the ThingWorx Platform or intermediate application requires a registered user license, regardless of whether such log-in ID is tied to their unique person or is generic to the device by which they are accessing. Standard & Premium SCO registered users may access the single ThingWorx application per site they were purchased for. Additional user licenses are required for each additional application at each site. SCO Solutions Enterprise registered users may access multiple applications when purchased with an SCO Solutions Enterprise bundle per site.
- “SCO Connected User” means a Registered User who has view-only access to Windchill for the purposes of viewing Work Instructions and related data (documents or drawings) in SCO applications. This license does not entitle the user to general view access in Windchill nor the ability to install and use ThingWorx Navigate View apps.
- A “Site” means a customer building or set of connected buildings where the software is being used.

Standard Model – The SCO Standard model permits Customers to use ThingWorx only in connection with PTC-provided SCO or service applications, and without limitation does not permit Customers to develop Custom Applications. The licensing basis for PTC’s SCO Standard model entails a fee per Site where the application will be deployed. Furthermore, fees are required for each SCO Registered User over 25 users per each unique app, and for Process Manufacturing, a fee is also required per Connected Asset.

SCO Solutions Premium Model - PTC’s SCO Solutions Premium model permits Customer to use ThingWorx to develop custom use case applications for SCO purposes, or extend standard applications for custom use cases. The licensing basis for PTC’s SCO Solutions Premium model entails 2 licenses: 1 licensing including a fee for use of the Solutions Premium ThingWorx Platform, and a separate licence with a fee for the Customer to deploy the custom applications at one site. An additional fee will be required for each application and each additional site where such application(s) are deployed. So for example, without limitation, if Customer deploys



two custom applications at two sites, two SCO Solutions Premium ThingWorx licences and four SCO Use Case Application licenses will be required. Furthermore, fees are required for each SCO Registered User over 25 users, and for Process Manufacturing, a fee is also required per Connected Asset. The SCO Solutions Premium model comes with the entitlements specified in the table below.

SCO Solutions Enterprise Model - PTC's SCO Solutions Enterprise model permits Customer to use ThingWorx to develop Custom Applications for SCO purposes. The licensing basis for PTC's SCO Solutions Enterprise model entails a fee for use of the ThingWorx Platform, and this fee will allow the Customer to deploy an unlimited number of applications at one site. An additional fee will be required for each additional Site where such application(s) are deployed. So for example, without limitation, if Customer deploys five applications at three Sites, three Site licenses will be required. Furthermore, fees are required for each SCO Registered User over 100 users per Site, and for Process Manufacturing, a fee is also required per Connected Asset. The SCO Solutions Enterprise model comes with the entitlements specified in the table below.

Digital Performance Management (DPM) and the **PTC Apps (AMU, CWC)** are PTC-provided applications that can be purchased by the Customer standalone or in connection with any of the SCO Solutions Models specified above. Customer may edit the mashups provided with these out-of-the-box applications (solutions), but is prohibited from creating new mashups (either directly or by excessively editing the existing mashups). Customer may integrate DPM and the PTC Apps with other systems but only for read-only purposes. Customer may access ThingWorx only to configure Kepware tags for connectivity, and for no other purposes. DPM and the PTC Apps when purchased stand-alone include 5 ThingWorx Kepware Servers per license.

	SCO Standard (DPM, AMU, CW, RTPPM)	SCO Solutions Premium Edition	SCO Use Case Application	SCO Solutions Enterprise Edition	SCO Solutions Custom Enterprise Edition
Prerequisite	N/A	N/A	SCO Solutions Premium Platform or PTC Services Application	N/A	
SCO Registered Users (included, more may be purchased separately)	25 per application, only to be used for that application	5 (only for administrative use purposes and not to access the SCO Use Case Application)	25	100 per Site included	
Connected Assets	Purchased separately. Only required if license is for use in Process Manufacturing.				
Custom Application included	0	0	1 (includes up to 10 Application Production User Interfaces)	Unlimited number of Custom Applications may be created	
ThingWorx Runtime License	1 per application per site	N/A	1 per Custom Application per Site	N/A	
ThingWorx Foundation	Included with each Edition				
ThingWorx Digital Performance Management (DPM)	Access to DPM license (1 per Site)	Purchased Separately		Access to DPM license (1 per Site) included in the bundle	Purchased Separately
PTC Apps (formally FSU Apps)	Access per app license (1 per Site) included	Purchased Separately		Included	Purchased Separately
ThingWorx Analytics	N/A	Included (32 cores)		Included (64 cores)	
ThingWorx Manufacturing Apps and Building Blocks	N/A	Included			



	SCO Standard (DPM, AMU, CW, RTPPM)	SCO Solutions Premium Edition	SCO Use Case Application	SCO Solutions Enterprise Edition	SCO Solutions Custom Enterprise Edition
ThingWorx Kepware Server	5 ThingWorx Kepware Server Manufacturing Suite per app (Designated Server)	0	5 ThingWorx Kepware Server Manufacturing Suite (Designated Server)	40 ThingWorx Kepware Single Factory Licenses (Designated Server)	
eLearning (Registered Users)	1 per SCO Registered User and SCO Connected User				
Technical Support	Gold included (Gold+ may be purchased as an upgrade)				
Software Content Management	N/A	Purchased separately			
ThingWorx Flow	N/A	Included			
ThingWorx Active-Active Clustering	Included				

ThingWorx Analytics - The ThingWorx Analytics software referenced in the tables above enable machine learning capabilities and other analytic services for the Internet of Things. ThingWorx Analytics is licensed on a Per Core basis. Analytics Server may be run in single-server or distributed mode. In distributed mode, only CPU cores running ThingWorx analytics code (e.g., API interface, analytics workers) require a Per Core license. Any installed component that delivers analytic computational functionality as indicated in the table above requires a ThingWorx Analytics Per Core license for each physical or virtual CPU core as reported by the operating system on which such component is installed. If the Customer exceeds the compute capacity of the included ThingWorx Analytics cores, the Customer can purchase additional core licenses for additional compute capacity on any of instance running components that deliver computational functionality.

ThingWorx OEM Program

The ThingWorx OEM Program, and the OEM agreement signed by Partner (Customer), allows a Partner to build, host and distribute custom built solutions and applications using the ThingWorx Platform. Each unique OEM solution must be installed on a different ThingWorx Platform. The signed OEM agreement specifies the scope of use and distribution rights, and outlines how Partner’s customers can access these solutions and applications. The licensing basis for each OEM Licensed Product is detailed in the table below:

Licensed Product Name	Licensing Basis
ThingWorx OEM Platform Edition (1)	OEM
OEM Registered Users (2)	RU
Assets (3)	OEM
ThingWorx Analytics (4)	Per Core (can only be purchased with the Enterprise Edition)
Software Content Management	License required for each Production Instance (as defined below in note 1 below)
OEM TWX Runtime license (5)	OEM
ThingWorx OEM Connected Site License (6)	OEM

(1) There are two different ThingWorx OEM Platform Editions: Premium Edition and Enterprise Edition. Each ThingWorx OEM Platform Edition includes one Instance for production usage and an unlimited number of Instances for non-production use only (except where PTC is hosting the Licensed Products for Customer, in which case the entitlement is one non-production Instance unless additional hosted non-production



environments are purchased). Each ThingWorx OEM Platform Edition includes a designated number of Registered Users and Assets for Partner’s internal use for initial development, non-production use, and on-going maintenance and development of the solution or application. Each ThingWorx OEM Platform Edition also includes the ThingWorx OEM Platform Edition-specific features as set forth in the table below.

The ThingWorx OEM Platform can be installed at the Partner’s physical premises or on the Partner’s designated hosting provider, if not hosted by PTC. An “Instance” means a dedicated deployment of application servers, all of which are located in one physical location, and their individual persistence databases. Each ThingWorx OEM Platform Edition includes the “ThingWorx agents” or “Edge Microservers” and a ThingWorx SDK, and a set of SDK Extensions to be used by the Partner to add connectivity into their run-time applications. The “ThingWorx agents,” “Edge Microservers,” and Partner’s applications created with a ThingWorx SDK and SDK Extensions are unlimited and distributable with connected products, but only for use with ThingWorx products. Source code provided for the ThingWorx SDK and SDK Extensions may be modified or distributed by Customer in connection with the permitted purpose above, provided that Customer complies with any license file information contained therein.

	Premium Edition	Enterprise Edition
Included Assets (for development use only)	100	
Included OEM Registered Users (for development use only)	10	
ThingWorx Analytics	Not Included	8 Cores included
Starter/Standard Success Plan	Included	
eLearning (Registered Users)	1 per User	
ThingWorx Foundation	Included	
Software Content Management	Not Available	Included
Technical Support	Gold	Gold (Gold+ may be purchased as an upgrade)
ThingWorx Flow	Included (9.0+)	
ThingWorx Active-Active Clustering	Included (9.0+)	

(2) “OEM Registered User” (designated as “IoT”) for SCO Use Cases (as outlined under the “ThingWorx Smart Connected Operations” section) means a log-in ID that enables access to the ThingWorx Platform directly or via an intermediate application, regardless of whether such log-in ID is used by one unique person or is shared by multiple people. For non-SCO Use Cases each OEM Platform Edition includes an unlimited number of “View Only OEM Users”. View Only OEM Users are users of the OEM Licensed Product that are authorized only to consume outputs from the ThingWorx Platform. These Users may not be authorized to, and must not, develop or modify mashups, applications or dashboards. View-Only OEM Users may have a log-in, or might be someone (e.g., a service desk employee) who accesses data through another system or through a shared log-in or screen.

(3) “Asset” (designated as “IoT”) (also sometimes referred to in the product itself or elsewhere as a “Device” or a “Thing” or a “Remote Thing”) means a sensor, device, machine, system, web service, etc. that is modeled (represented) and/or registered as an asset (or “device” or “thing” within the Licensed Product) or any separately defined part of the foregoing if it is being treated as a separate asset within the software. For example, without limitation, an Asset could be a brake press, industrial dryer, another computer system, or a set of individual components within those machines if modeled or registered as a separate asset in the software), etc.

“Simple Narrow Band Asset” (NB) is a class of Asset (SCP section 3) that runs on either an industry standard Low Power Wide Area Network (LPWAN) or 5G network with the following additional constraints: No remote access from ThingWorx into the asset, No Software Content Management (SCM) capability, and no file transfer capability

(4) “ThingWorx Analytics” enables machine learning capabilities and other analytic services for the Internet of Things. ThingWorx Analytics may be licensed for use as specified in Note 2 above. ThingWorx Analytics is licensed on a Per Core basis. Analytics Server may be run in single-server or distributed mode. In distributed mode, only CPU cores running ThingWorx analytics code (e.g., API interface, analytics workers) require a Per Core license.

Any installed component that delivers analytic computational functionality as indicated in the table above requires a ThingWorx Analytics Per Core license for each physical or virtual CPU core as reported by the operating system on which such component is installed. If the Customer exceeds the compute capacity of the included ThingWorx Analytics cores, the Customer can purchase additional core licenses for additional compute capacity on any of instance running components that deliver computational functionality.



(5) “OEM TWX Runtime License” or Run-time license is a ThingWorx Platform license that enables a Partner to run their application or solution at an end user site (i.e., not hosted by Partner). The OEM Embedded License enables the Partner’s application or solution to work remotely, but restricts any development on the ThingWorx platform by the end user.

(6) “ThingWorx OEM Connected Sites” is an additional “Per Site” fee, which includes an OEM TWX Runtime License for a Partner’s hosted solution or application in SCO like Use Cases (as outlined under “ThingWorx Smart Connected Operations” section). This fee aligns the OEM Program with the SCO license model, in which a platform fee is charged for each end user site. The ThingWorx OEM Per Site Fee is in addition to applicable OEM Registered User fees.



Other ThingWorx Products

ThingWorx Kepware Server (formerly ThingWorx Industrial Connectivity) and LinkMaster and RedundancyMaster: Fall under the Designated Computer (DC) licensing terms outlined under Common Licensing Basis. These products will be shipped to the Customer location set forth in an Order or Quote, but Customer may also install, operate and use such products at any of the Customer’s site(s) throughout the world, notwithstanding any restrictions in the License Agreement in relation to limiting use of Licensed Products to the country of installation, but subject to compliance with all applicable export laws, restrictions and regulations. Customer further agrees that it will be responsible for all taxes, duties and other fees and amounts attributable to the use of these products at locations other than the install location set forth in an Order or Quote.

ThingWorx Kepware Manufacturing Suite

Includes one ThingWorx Kepware Server (KEPServerEX) as a perpetual or subscription license, as set forth in a Quote or Order. Certain features are included with a base license as identified in the product description; others may be purchased separately and are also licensed on a Designated Computer basis. Select offerings come with access to the base suite of Kepware features (drivers, plug-ins, functionalities).

ThingWorx Single Factory License is a bundle of ThingWorx Kepware Server licenses that are sold per Site (see SCO). The number of Designated Computer licenses is identified in the product description. These licenses come with access to the full suite of Kepware drivers and plugins from the Kepware download page and must be used in support of a single Site.

ThingWorx Kepware Edge licenses are sold per “connected asset” and are limited to a specified number of tags (which is essentially a data item) identified in the product description. The Kepware Edge license includes a connectivity layer that connects a single remote device or gateway to the ThingWorx SCP platform.

ThingWorx Machine Builder (MB) Bundles

The ThingWorx Machine Builder Bundle is a ThingWorx bundle that allows MB Customers to license the ThingWorx Platform for connecting the Customer’s products and creating IoT applications that can be shared across the ecosystem. The licensing basis for each Licensed Product in the MB Bundle is detailed in the table below:

	MB Starter	MB Tier 1	MB Tier 2	MB Tier 3
Assets (included)	25	250	1000	2000
SCP Registered Users	5	5	5	5
View-Only SCP Users	Included	Included	Included	Included
eLearning (Registered Users)	1 license included with each SCP Registered User			
ThingWorx Premium	Included	Included	Included	Included
Technical Support	Gold+	Gold+	Gold+	Gold+
ThingWorx Analytics	Purchased separately	Purchased separately	Purchased separately	Purchased separately
Software Content Management	Purchased separately	Purchased separately	Purchased separately	Purchased separately
ThingWorx Flow	Included	Included	Included	Included
Asset Advisor	Included	Included	Included	Included
ThingWorx Kepware Edge SaaS Only	25	250	1000	2000
Vuforia Chalk (5 User) Hosted	Included	Included	Included	Included



Vuforia Products

Vuforia Studio

There are different Vuforia Studio bundles: Starter, Basic, Premium, and Professional. Each bundle includes the Vuforia Studio Experience Creator, the Experience Service (licensed on a Designated Server basis), Experience and the Vuforia View Application with Bundle-specific features as set forth in the table below. Vuforia Studio licenses allow Customer to access and use the ThingWorx platform for user administration purposes only; any additional use cases require purchase of a ThingWorx IoT platform edition.

Definition of “View”

A “View” (also referred to as an “Experience” or “EXP”) is a presentation of a mix of textual, numeric and 3D data that is presented to a user by the Vuforia View application. The Experience may include augmented reality interaction 2D assets, 3D assets, and/or “live” data from Things via ThingWorx. A View has a definite “entry point” which is invoked via a user action to select the View. This may be by selecting a “bookmarked” or “downloaded” experience, following a scan of a ThingMark, a designated QR code, or a deep link. There is no definite “exit point” other than exiting Vuforia View or requesting another View. Invoking the same Experience within 15 minutes will count as a single Experience. Examples of Views include, without limitation:

- A service experience to instruct a service technician how to perform a procedure
- A marketing experience to present capabilities of a product to consumers
- A monitoring experience to display live data streaming from a machine

Bundles

Each Vuforia Studio Bundle comes with the entitlements specified in the table below:

	Starter	Basic	Premium	Professional
Registered Users (included, more may be purchased separately)	20	100	200	1,000
Annual Views (for Non-Registered Users)	2,500	5,000	10,000	50,000

Registered Users

Customers may purchase additional Registered Users for users who will author and/or consume Views. There is no limit on the number of Views that may be consumed by Registered Users. Registered User licenses are required for persons accessing or consuming Experiences who are either (i) employees or contractors of or otherwise engaged by the Customer or (ii) who receive login accounts/passwords to the Customer’s Studio instance. Notwithstanding the definition of “Registered User”, when a person ceases to be a Registered User (by reason of such license being reassigned to another person) and subsequently returns to Registered User status, no new license fee shall be due unless at such time Customer’s number of Registered Users exceeds the number of licenses purchased.

Non-Registered Users

Customers may purchase additional public Views for consumption by individuals who are not Registered Users (up to the number of Views purchased).

Annual Views

Annual Views is the maximum number of Experiences that can be viewed per year by Non-Registered Users.

Vuforia Engine & Cloud Recognition Service

The licensing basis for each Licensed Product is detailed in the table below:

Product Name	Licensing Basis
Vuforia Engine Premium (1) (2)	Per Company
Cloud Recognition Service Standalone	n/a
Model Targets (3)	MDT
Area Targets (4)	AT



Each Vuforia Engine and Cloud Recognition Service license include the features set forth in the table below:

	Vuforia Engine Premium	Cloud Recognition Service Standalone
Number of Applications (5)	Unlimited	
Model Targets	500	n/a
Area Targets	500	n/a
Cloud Targets	1,000	Specified in the Quote
Cloud Recos	1,000	Specified in the Quote

1. The Vuforia Engine Premium package includes a license to the Cloud Recognition Service. Customer will be required to pay any applicable overage fees monthly in arrears.
2. “Per Company” is defined as the Customer and any entity that directly controls, or is controlled by, or is under common control with Customer. For this purpose, “control” means ownership of more than fifty percent of the voting shares or the power to direct or cause the direction of, the management, governance or policies of an entity, directly or indirectly, through any applicable means including legal, beneficial or equitable ownership, partnership, or some other form of interest, by contract or other applicable legal document or otherwise.
3. Model Targets (MDT) - Model Targets are Targets created from 3D models. Model Targets may only be deployed with a Vuforia Engine Premium license for which it was purchased as specified in the Quote.
4. Area Targets (AT) – Area Targets are Targets that are created from the 3D scan of an environment using a supported 3D scanner. Area Targets may only be deployed with a Vuforia Engine Premium license for which it was purchased as specified in the Quote.
5. Permitted Users of a Company may use the Vuforia Engine Licensed Product to develop applications for the Company or on behalf of a third-party. A Company is not permitted to transfer the Vuforia Engine license or any license keys to a third-party but may transfer ownership of an application to such third-party.



Training and Education/Intern Products

Training Products

PTC University Learn Online Subscriptions

- PTC University Learn licenses are licensed on a Registered User basis (also referred to as “Named User”), which means that the license can only be used by one person on a password-restricted basis. Password sharing is not permitted.
- Licenses cannot be reassigned except: (i) at the end of each contract year, or (ii) where the Registered User is no longer a Customer employee or transfers to a role that does not require the person to use PTC software.
- PTC University reserves the right to add, delete, and modify courses in any Learn offering at any time.
- Learn is an auto-renewing subscription license, billed annually in advance.

PTC University Enterprise LEARN Subscriptions

- PTC University Enterprise LEARN subscriptions may be used by all users whose PTC eSupport accounts specify the customer number (or series of customer numbers) associated with the Customer in the Quote.
- PTC will monitor enrollments every three months commencing on the contract start date (each such three-month period is a contract quarter).
- Quarterly enrollment limits (as specified in the quote) are tracked using a combination of completed classes within the contract quarter plus future class registrations within the contract quarter.
- Each contract quarter, if a Customer reaches their quarterly enrollment limit, the Customer will be required to either purchase more licenses to cover the additional enrollments, or enrollments will be blocked in order to stay within the quarterly enrollment limits for that contract quarter.
- Unused quarterly enrollments will expire at the end of the contract quarter term (i.e., they will not roll-over into any other contract quarter) and will not be refunded or transferred to another contract or account.
- PTC reserves the right to add, delete, and modify courses in any Learn offering at any time.
- Enterprise LEARN is an auto-renewing subscription license, billed annually in advance.

eLearning Subscriptions in Precision LMS and Training Central

- All eLearning is licensed by active monthly users. An “active monthly user” is any user who accesses the LMS platform within a calendar month.
- PTC University reserves the right to add, delete, and modify courses in the eLearning Subscription at any time.
- Any monthly overages will result in a license increase and invoice for the remaining term of the subscription.
- Content created using Customized eLearning licenses is the property of PTC.

Education/Intern Products

The following Licensed Products may only be used for educational purposes; use for other purposes, in particular for commercial or productive purposes or by regular personnel of Customer, is not permitted and represents a violation of the terms of the License Agreement.

Education/Academic Licenses

If the Licensed Product is identified as “University Plus,” “Professor’s Edition/Version,” “Academic Edition/Version,” “Classroom,” or “Student” or if the name otherwise indicates that it is intended for academic or education purposes, Customer must be enrolled in or employed by an academic institution and must use the Licensed Product solely for educational purpose. If Customer does not meet one of these qualifications, Customer has no right to use such Licensed Products. Without limitation, non-educational research or funded educational research conducted using the facilities of an academic institution or under an academic name does not qualify as “educational purposes” and use of educational software for such purposes and represents a violation of the terms of the License Agreement.

Research License

If the Licensed Product is identified as “Research”, despite anything to the contrary in the License Agreement, Customer must be a college, university, university-owned research lab or center, or teaching hospital and may only use the Licensed Products for research purposes. In



no event shall the Licensed Products be used for commercial purposes, including but not limited to the sale of intellectual property rights generated by the research or the creation of training materials for resale using the Licensed Products.

Intern/Apprentice Licenses

If the Licensed Product is identified as “Intern” or “Apprentice” or if the name otherwise indicates that it is intended for use by interns or apprentices, the Customer shall limit the use of the Licensed Product solely for training of interns or apprentices of Customer (i.e., temporary personnel who are still engaged in a course of study but working at Customer in order to gain practical experience in their field of study). Such training may only be conducted by employees of Customer, and not by employees of any third parties.

Examples	Education License	Research License	Internship License	Commercial License
K – 12 Schools, Undergraduate classes (*)	X			
Student enrolled in K-12 program or university/college (*)	X			
Graduate student research projects – non-funded	X			
Curriculum development (for internal use only)	X			
Undergraduate research projects – paid or generating IP		X		
Publication of research results in open source platforms		X		
University owned research lab/center		X		
Graduate student projects – funded with deliverables (IP remains property of university)		X		
Curriculum development – open source sharing		X		
Academic non-profits or consortiums		X		
Teaching Hospital			X	
Commercial enterprise uses employees to train undergraduate or graduate interns			X	
Commercial enterprise uses interns to develop commercial IP				X
National Laboratories				X
Start-up commercial enterprises				X
Individual consulting				X

(*) In countries where K-12 is not applicable, references to it above mean primary and secondary education.