

Control Performance Analytics Product Sheet



Control Performance Analytics (CPA) is a cloud-based application that delivers transparency of proportional–integral–derivative (PID) control loop data and provides the capability to optimize control loop parameters. Identification of control loop states is based on automatic Key Performance Indicator (KPI) calculations, capable of identifying setpoint tracking, steady state problems and even static or sliding friction in valves.

The application also provides automated calculations of new parameter sets in order to optimize and tune control loops without impeding plant operation.

Prerequisites	
Subscriptions	A valid MindSphere Capability Package (Basic/Standard/Premium) subscription is required. Additionally, a valid subscription to an CPA application extension (10 CPA License Unit/500 CPA License Unit/ 2000 CPA License Units/ 6000 CPA License Units) is needed for analysis and optimization calculations within CPA.
Data acquisition (case 1) (PCS 7 V7.1 SP2 to V9.0 all SPs)	When using PCS 7 data, it is your responsibility to install and to configure the Data Collector and to provide the collected data continuously.
Data acquisition (case 2) (3 rd party system or PCS 7 older than version 7.1 SP2)	If CPA shall be used for a non-PCS 7 system or PCS 7 older than version 7.1 SP2, this must be clarified in advance with us on a case-by-case basis. For transmission of PID controller data, you must provide the data in the format defined by us. Our confirmation of the suitability of your data is a necessary condition for provisioning of the CPA.
Data transmission	CPA requires that the data is transmitted by you to us. <ul style="list-style-type: none"> • For data acquisition (case 1): <ul style="list-style-type: none"> ▪ The Collected Data can be uploaded by you regularly (e.g. daily or weekly) within the CPA application. ▪ The Collected Data can be automatically uploaded using the MindSphere Connector. It is your responsibility to install and to configure this software. • For data acquisition (case 2): You have to provide manually all required data in a .csv file per control loop on a monthly basis. To begin manual data transmission, a notification e-mail about available new data must be sent to a mailbox defined by us (please refer to Support). We will provide the necessary upload login information by e-mail. You are responsible for sending the data.

	<p>CPA needs the following data (provided manually or using Data Collector) for the analysis and assessment of control loops (“Collected Data”):</p> <ul style="list-style-type: none"> • Required: <ul style="list-style-type: none"> ▪ Setpoint (SP) ▪ Process value (PV) ▪ Manipulated variable (MV) ▪ Loop control is closed (LoopClosed) ▪ External set point active (SP_ExtAct) ▪ Proportional gain (Gain) ▪ Differential time (TD) ▪ Integral time (TI) ▪ High limit of set point (SP_HiLim) ▪ Low limit of set point (SP_LoLim) ▪ High limit for manipulated variable in manual mode (MV_HiLim) ▪ Low limit for manipulated variable in manual mode MV_LoLim • Optional (based on availability): <ul style="list-style-type: none"> ▪ Indication about gain: positive or negative (NegGain) ▪ Dead band (Deadband) ▪ Unit of measurement for MV (unitMV) ▪ Unit of measurement for PV (unitPV) ▪ Assigned name of process area (areaname) ▪ Indication about controller mode: manual or automatic (manual) • Additional optional data: (Only applicable with data acquisition case 1) <ul style="list-style-type: none"> ▪ PCS 7 events generated in your plant
Web browser	<p>An HTML5 capable Internet browser with latest version is required (e.g. Google Chrome). The recommended screen resolution is 1024x768 or higher. CPA is optimized for Google Chrome.</p>

Description	
CPA analysis features	<p>The CPA provides analysis of the control performance of PID control loops. The analysis consumes CPA License Units. The analysis results are exclusively available within CPA. Please refer to our user manual (available within user interface of CPA application) for further details about the analysis and provided KPIs.</p>
CPA recommendation	<p>Based on the KPIs of the various categories, possible causes are listed and recommendations for correction are provided. In the case of unspecific error patterns or unknown causes, it is advisable to consult an expert to investigate the problems in more detail.</p>
Control performance optimization calculations	<p>CPA can also provide optimization calculations for PID parameters. The optimization calculations consume CPA License Units and can be used for all control loops analyzed, as long as the content of the data provided by you is sufficient to permit a system identification. For more details and a list of supported controller types, please refer to our user manual (available within user interface of CPA application). You are solely responsible for the achievability or otherwise of the simulated control loop behavior for the optimized PID parameter sets by means of optimization measures.</p>

Pricing Model				
Application subscription	Control Performance Analytics			
Fee	See Order ¹			
Billing cycle	Full amount in advance			
Application subscription	The application subscription allows access and use of the CPA application. The Data Collector and MindSphere Connector are parts of the application subscription and cannot be ordered or used separately for other purpose. Additionally, CPA License Unit Extension is needed for analysis and optimization calculations within CPA.			
Subscription Term	The Subscription Term for the application is generally either 12 or 36 months. The Subscription Term shall automatically renew if set forth in the Order.			
Co-term (renewal and termination)	The Subscription Term for this application will be co-termed with the Subscription Term for your existing MindSphere Capability Package.			
Application Extensions				
Subscriptions	CPA 10 License Units Extension	CPA 500 License Units Extension	CPA 2000 License Units Extension	CPA 6000 License Units Extension
	Includes 10 CPA License Units	Includes 500 CPA License Units	Includes 2000 CPA License Units	Includes 6000 CPA License Units
Fee	See Order ¹	See Order ¹	See Order ¹	See Order ¹
Billing cycle	Full amount in advance			
Extension subscriptions	Additional fees will be applied for any extension subscription which include 10, 500, 2000 or 6000 CPA License Units. CPA License Units are needed for analysis of control loop performance and optimization calculations. In order to use the subscribed CPA License Units, activation within CPA application is needed.			
CPA 10 License Units Extension	Includes 10 CPA License Units which are enough e.g. for the analysis of up to 10 control loops for 1 month within the 12 month Subscription Term.			
CPA 500 License Units Extension	Includes 500 CPA License Units which are enough e.g. for the analysis of up to 166 control loops for 3 months or up to 62 PID optimization calculations or any mix thereof within the 12 month Subscription Term.			
CPA 2000 License Units Extension	Includes 2000 CPA License Units which are enough e.g. for the analysis of up to 166 control loops for 12 months, 500 control loops for 4 months, or up to 250 PID optimization calculations or any mix thereof within the 12 month Subscription Term.			
CPA 6000 License Units Extension	Includes 6000 CPA License Units which are enough for the analysis of up to 500 control loops for 12 months, 1000 control loops for 6 months, or up to 750 PID optimization calculations, or any mix thereof within the 12 month Subscription Term.			
Subscription Term	The Subscription Term for the extensions is generally 12 months. The Subscription Term shall automatically renew if set forth in the Order.			

Co-term(renewal and termination)	The Subscription Term for any extensions will be co-termed with the Subscription Term of this application. In case of different initial Subscription Terms for the application and extensions, price and number of included License Units will be pro-rated. If an application subscription is terminated, the associated extensions will also be terminated at the same time.
Payment Terms	Fees for Control Performance Analytics and for any of the extensions described herein are fully charged in advance for the entire Subscription Term unless otherwise expressly provided in an Order.
1) Subscription-based pricing is set forth in the Order.	

General

Service Level Agreement	The Monthly Availability for this application is at least 95%. Monthly Availability is defined in the Cloud Support and Service Level Framework available at https://www.siemens.com/sw-terms/sla .
Data consistency	We do not check the data sent for accuracy, plausibility or completeness. Your entitlement covers just an analysis of the data sent correctly.
Third-Party Terms	The Third-Party Terms for CPA are made available via the following web link: https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/Third-Party-Terms .
Support	Support is available in German and English via e-mail CPA.support.industry@siemens.com . Hours of operation are Monday through Friday, 8:00 am to 5:00 pm CET - excluding national and local holidays. Support is available in English and German.

Export Control Regulations

AL	N
ECCN	N

Security Information

General	In order to protect plants, systems, machines and networks against cyber threats, it is necessary that you implement and continuously maintain a holistic, state-of-the-art industrial security concept.
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Definitions

Data Collector	Software which is used to collect control loop data from a PCS 7 V7.1 SP2 or higher systems. This software is part of the CPA subscription.
CPA License Unit/s	CPA License Units are used within CPA application for analysis of control loops performance and optimization calculations. Example 1: The consumption of a single CPA License Unit enables the analysis of continuous period of 1 month of control loop data from 1 control loop. Example 2: With 8 CPA License Units 1 PID optimization calculation for 1 control loop can be performed where the CPA License Units are only consumed after successful generation of PID parameter recommendations.
MindSphere Connector	Software which can be used to automatically send the Collected Data, collected by Data Collector, into CPA. This is an alternative option to the manual upload initiated by the User. The MindSphere Connector works only with the Data Collector.
General	Unless otherwise indicated, capitalized terms used in this document shall have the meaning given to them in this Product Sheet or elsewhere in the Agreement. You may also want to check our Glossary .