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Compatibility, Migration

1. I am an existing End- User customer. Can I upgrade an existing control system to EcoStruxure Hybrid DCS?

An upgrade from an existing "standalone" control system to EcoStruxure Hybrid DCS requires a certain degree of re-engineering of the control system in EcoStruxure Hybrid DCS. Note that when performing such an upgrade, the objective would be to do more than a 1 for 1 code migration to benefit from the features delivered by EcoStruxure Hybrid DCS.

2. I am an existing end user or system integrator and I have built my control standards using UAG. For my next project, I would like to maintain these standards. Is it possible for me to convert them to use with EcoStruxure Hybrid DCS?

Yes, this is possible although there is no "push of the button" automated tool available. The standards must be converted into EcoStruxure Hybrid DCS objects. Schneider Electric can provide a Service to allow a painless conversion from UAG standards to EcoStruxure Hybrid DCS standards. This needs to be analysed case by case. Anyway, the evolution cost from UAG to EcoStruxure Hybrid DCS will be lower than to any competitor offer.

Features - Deployment and Execution

3. How will the user diagnose an issue on a running system and resolve it with EcoStruxure Hybrid DCS?

Through the status of the objects that are displayed on pages of the operator station, the operator gets a first level of diagnostic. He can be helped through the object faceplates, which can provide additional information about failure conditions and interlocks that are not fulfilled to run the process correctly.

Then advanced diagnostic feature can provide additional help to diagnose the process. This service to diagnose the control system is called "Navigation Services". EcoStruxure Hybrid DCS is able to provide navigation services in Operation, enabling access to any information related to a graphical element selected on a SCADA page that represents an object instance. With this service, the user accesses the program that controls these objects (control facet), to "navigate" from one object instance to another that is linked to the selected one, with access to documents. All the alarms are organized in a tree reflecting the application description, helping the user to identify which area of the control system is arising; the failure or warning.

4. Do I have to stop my Operating System while upgrading it?

Yes, it is necessary to stop the system to upgrade EcoStruxure Hybrid DCS to a newer version. The offer provides the tools to migrate the application to newer versions with a minimum of effort.

5. Can we prepare the modifications (Version N+1) of a running control system while it is running the Version N to deploy at a later date?

Yes, it is possible. EcoStruxure Hybrid DCS allows you to plan modifications and deploy them later, it is also possible to perform on-line modifications. The user can prepare the modifications in their office, creating the version N+1 of the application. Then they go on site and connect the engineering station to the controller (to the version N). "Deploy changes" command allows the user to connect in on-line mode and perform the updates in the controllers. The user can decide to deploy all the changes or only a subset of them (the user has the list of changes and they can decide what must be downloaded). Another way is to prepare the modifications on site with the engineering station while EcoStruxure Hybrid DCS is running and deploy the changes at the appropriate point in time.

6. What are the possibilities for online changes to the hardware configuration?

On-line modifications of the hardware are possible when the controller accepts them and is supported by Unity Pro. EcoStruxure Hybrid DCS is able to accept on-line changes to the hardware configuration of a controller, but this is not fully mastered by the system platform. Manual interaction is required to reproduce in the topology of EcoStruxure Hybrid DCS exactly with all the modifications that were done during a refinement with Unity Pro.

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The operating mode will be enhanced to completely handle the changes from EcoStruxure Hybrid DCS, in a later version.

7. What are the tools proposed by EcoStruxure Hybrid DCS to perform on line debugging?

EcoStruxure Hybrid DCS relies on the services embedded in the software participants without restriction. The offer adds new services as navigation services in the application from the SCADA and filtering of the alarm according to the application tree, which eases the debug during commissioning.

8. Is it possible to jump from an alarm to the graphical page where is located the object origin of this alarm?

This feature is not available in the current release.

Features – Libraries

9. Which libraries are delivered with EcoStruxure Hybrid DCS?

EcoStruxure Hybrid DCS provides built-in process, communication and devices libraries. Moreover, the added value of optional segment / vertical libraries with the offer provides application-specific benefits (Water, F&B ...). Energy management is also provided through optional libraries to be used with the offer.

Features – Project

10. Does EcoStruxure Hybrid DCS allow alarms to be sorted and filtered according to the process tree?

The supervision view inherits the process description (application tree) that describes the process in a hierarchical manner with object instances. The result is an automatic filtering of the alarms according to this process description, in order to ease the diagnostic.

11. Does EcoStruxure Hybrid DCS generate automatic navigation in the supervision project based on the application description?

From the engineering phase, EcoStruxure Hybrid DCS automatically builds the navigation between “facets” (point of view of the object) of an object instance and the navigation between object instances. Then during operation, the operator automatically gets all these relations sorted by type through a mini browser and can navigate across them. Selecting a relation in the mini browser allows the user to "navigate" to this item, which is related to the graphical object selected on the supervision page.

Features – System

12. Does EcoStruxure Hybrid DCS support an audit trail?

Audit trail covers two areas: log activities during Engineering to track the changes in the application and log activities during operation, tracking user operations (e.g., change of data). Runtime audit trail during operation is already possible thanks to the Supervision software capabilities.

13. How do I backup my EcoStruxure Hybrid DCS project?

Two possibilities are offered to back up user's data:

1. EcoStruxure Hybrid DCS offers the possibility to backup and restore the database. In that case one or more control systems are saved
2. EcoStruxure Hybrid DCS offers the possibility to backup and restore a control system. In that case, only one system is saved at a time

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14. Where are managed alarms in EcoStruxure Hybrid DCS: Controllers or alarm servers?

The alarms are configured through the objects and managed by the alarm servers. The Supervision is able to filter the alarms according to the control system application tree, enabling you to easily locate the scope and purpose of the alarms.

Features – Topology

15. Is the integration of Electrical Devices possible with EcoStruxure Hybrid DCS?

EcoStruxure Hybrid DCS supports serial devices and Ethernet devices. The libraries embed ready-to-configure objects either for automation and electrical (Power) devices, like SEPAM and Power meters, circuit breakers. Most common devices are modelled by a template. Other devices can be managed by a generic template that is able to define the configuration to fit with the data that is managed by the device.

16. Which kind of high availability can be deployed with EcoStruxure Hybrid DCS?

The supervision can be redundant (operation servers and clients) to provide the high availability of the operations in the control rooms. Redundant networks and redundant controllers (Quantum or M580) provide the high availability of the control itself. High availability of the system server is not available in this release.

17. Can we use supervision Web clients with EcoStruxure Hybrid DCS?

Web clients can be used in a EcoStruxure Hybrid DCS configuration. But navigation services are not available on Web clients.

18. Does EcoStruxure Hybrid DCS manage instrumentation?

Instrumentation from a partner (Krohne) is supported through a set of dedicated device objects.

Instruments from other suppliers can be used in EcoStruxure Hybrid DCS architectures by using generic device profiles or design specific templates.

19. Can we access documentation about a device located on a server through the selection of that device in the system?

Thanks to the object model, EcoStruxure Hybrid DCS is able to provide navigation services in Operation, enabling access to any information related to a graphical element selected on a SCADA page that represents an object instance. It is possible to associate documents to a given instance; these documents are stored on a specific location on the system server. In a next release, it is planned to enlarge this capability with a new kind of facet to an object. This facet will contain all the information to access locally or remotely to documents.

Offer, positioning, catalogue

20. What is the name of Schneider Electric DCS offer for Hybrid Industries and what is it exactly?

The Schneider Electric Process Automation System for Hybrid Industries is called EcoStruxure Hybrid DCS. It includes all the software for engineering, operation and maintenance and the automation architectures based on Modicon controllers.

21. What is the positioning of EcoStruxure Hybrid DCS with regard to a traditional DCS? What are the main differences?

EcoStruxure Hybrid DCS as a DCS provides integrated services to engineer, operate, diagnose and maintain a control system application. The engineering has object-oriented configuration thanks to libraries of object templates. A DCS is "integrated" with little flexibility to extend with add-ons coming from third-parties except when they have already been planned (for example, partnerships).

EcoStruxure Hybrid DCS is based on the collaboration of different software (called "participants") and a single database for the control system application, with the capability to accept new participants and third-party

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components. As such, EcoStruxure Hybrid DCS is much more open and flexible than a DCS offer "pure player." EcoStruxure Hybrid DCS is a Platform Automation System which goes beyond the pure values of a DCS.

22. What is the positioning of Schneider Electric and former-Invensys' different DCS offerings?

The Foxboro Evo process automation system meets the needs of complex and highly automation intensive industries that require large amounts of advanced process control, integration with critical or custom applications that may or may not be in real time, and highly integrated batches.

EcoStruxure Hybrid DCS provides an option to meet customer needs that are more focused on flexibility and openness, and where a mix of process, sequential, manufacturing and assembly functions are required.

23. Are there plans to embed the WonderWare offer inside EcoStruxure Hybrid DCS?

Yes, in our roadmap we have planned to include WonderWare System technology as a supervisory environment in EcoStruxure Hybrid DCS. It will not replace Vijeo Citect, but enables Customers to select one or other supervision when designing a control system.

24. Does EcoStruxure Hybrid DCS replace the existing Controllers and Scada offers from Schneider Electric?

No. EcoStruxure Hybrid DCS is fully complementary to Schneider Electric's existing offers for process automation. EcoStruxure Hybrid DCS provides a single environment, which also requires a specific configuration approach.

Our integrated Distributed Control System approach is part of our "standalone architecture" approach and shares the same hardware platforms and Ethernet architectures. This provides maximum flexibility of choice and freedom for customers to choose and go either way.

25. What is the difference between EcoStruxure and EcoStruxure Hybrid DCS?

EcoStruxure is Schneider Electric's automation architecture for industrial and infrastructure customers.

EcoStruxure Hybrid DCS is Schneider Electric's innovative Distributed Control System and is part our EcoStruxure architecture, sharing the same hardware platforms and Ethernet architectures.

26. Is there a EcoStruxure Hybrid DCS subscription service?

Yes, Subscription service is part of a comprehensive portfolio of services available for EcoStruxure Hybrid DCS. It includes telephone support, live chat, case management, access to a knowledge database through a Web site, and software updates. The entry level service (technical support) needs to be included in any project the first year.

27. Can we state that EcoStruxure Hybrid DCS is compliant with ISA S88?

Yes, we comply with ISA S88 because the application engineers are able to fulfill these rules with EcoStruxure Hybrid DCS. The application manager in EcoStruxure Hybrid DCS makes it possible to organize the process control application in a hierarchical tree, with naming conventions for object instances and variables that belong to a given folder of the tree. But EcoStruxure Hybrid DCS doesn't restrict the compliance to S88, making it possible to also comply with other models.

28. What is the EcoStruxure Hybrid DCS licensing model?

The licensing model is based on two parameters:

1. The topological architecture deployed at the customer site for servers and clients. Each of them requires a license. No license is attached to controllers
2. The size of the project deployed onsite (runtime). The parameter is the number of object instances independent from the topology

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29. What does EcoStruxure Hybrid DCS provide in terms of cybersecurity?

Cybersecurity must be considered at system level, following a deep analysis of the architecture and define a strategy of implementation to reduce the vulnerability of the system. EcoStruxure Hybrid DCS is based on our automation offer, well designed to ensure protection against cyber-attacks. As well as the other offers, EcoStruxure Hybrid DCS is tested against penetration tests to ensure the robustness against intrusion.

30. Is it possible to quantify potential benefits and the types of applications where EcoStruxure Hybrid DCS will deliver benefits?

EcoStruxure Hybrid DCS provides benefits both during operation and maintenance:

- Reduces the downtime thanks to the navigation in operation. The operator / maintenance staff get all the information related to an object (ex: from a mimic on a SCADA page), speeding up the diagnostics. The outcome is better availability of the production means and operational efficiency.
- Simplifies maintenance (management of automation systems) thanks to a single repository of all data concerning the control system application.

Openness

31. Are any of the Industry partners (CAPP) software offers integrated in EcoStruxure Hybrid DCS?

EcoStruxure Hybrid DCS manages a XML format as a capability to exchange static data with other application software. OFS that is a standardized OPC driver, is our solution to exchange real time data with third-party applications.

32. Does EcoStruxure Hybrid DCS include a Historian tool / historian function?

Integration of Historian is not available. Nevertheless, it is possible to tag information in EcoStruxure Hybrid DCS in order to get the historization of the data easily. So installation of Historian aside EcoStruxure Hybrid DCS provides services of data historization, even if not fully integrated.

33. Does EcoStruxure Hybrid DCS include a change management function? Are we using or are we compliant with MDT Software?

A basic level of Change Management is embedded inside EcoStruxure Hybrid DCS: who is making a change and which section the changes were made is tracked in the notification panel and this log can be saved.

Change management is considered as a key service for users and will be integrated as a core function of the offer. It is planned in our roadmap, but not available in the current release. Nevertheless, it is possible to administer the changes both for supervision and control projects thanks to a third party software named "MDT Software". This software is able to manage changes of projects individually.

34. Is it possible to include third-party controllers in a EcoStruxure Hybrid DCS application?

Yes, it is possible to have third-party controllers in a EcoStruxure Hybrid DCS architecture. In that case, manual work has to be done to manage the communication with the operator interface. However, obviously a unique database is not possible for that data.

35. Is EcoStruxure Hybrid DCS only a Process Control application or does it takes into account the needs of other domains?

EcoStruxure Hybrid DCS is not only a Process Control platform. Its scope is also to provide the capability to welcome tools and services from other domains. For example, EcoStruxure Hybrid DCS provides superior benefits in energy efficiency through the association of automation and power monitoring within the same environment. Power meters and other electric devices are managed within EcoStruxure Hybrid DCS.

36. What about MES within EcoStruxure Hybrid DCS?

The current plan is to provide openness and a certain level of synergies / collaboration in future versions, rather than a full integration of a MES application system.