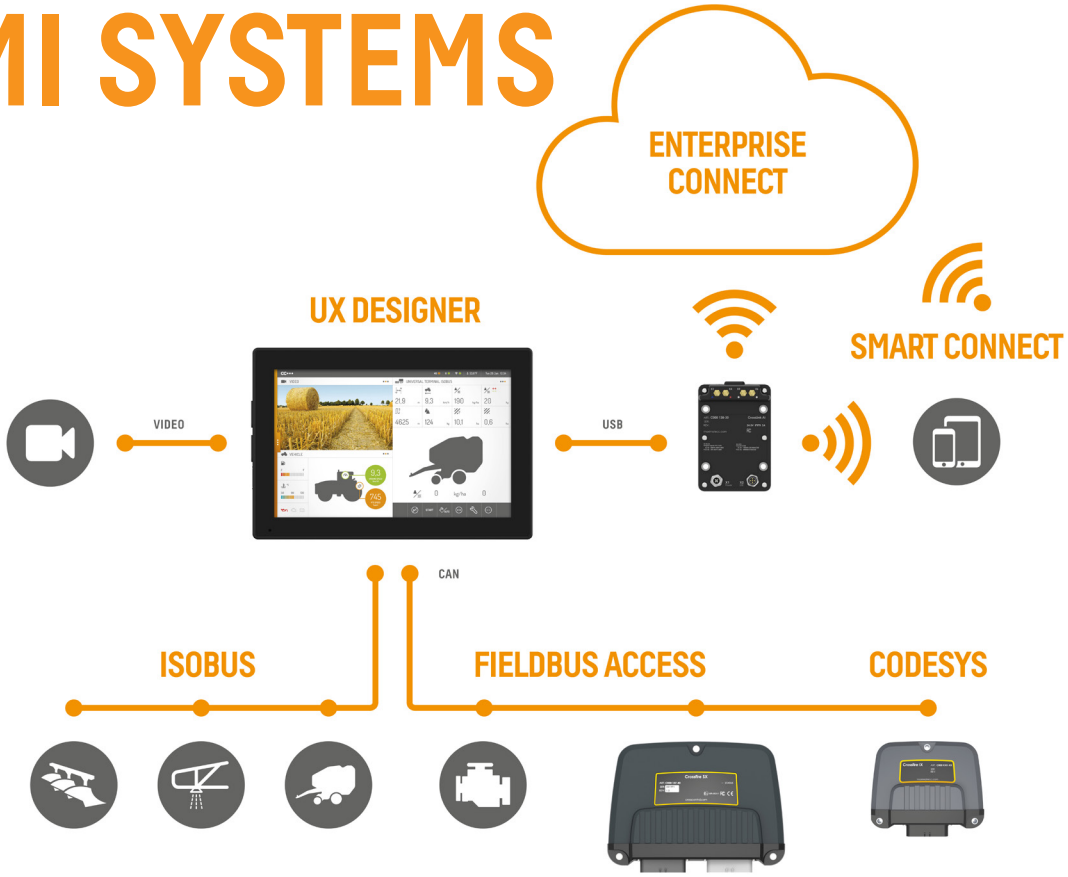
LINX SOFTWARE SUITE

MODULAR SOFTWARE PLATFORM FOR HMI SYSTEMS



LinX Software Suite is an open and modular Software Application platform based on Linux and Qt. The platform runs on all CrossControl display and controller products with advanced ARM or x86 cores, covering displays in the size range 3.5'' to 15''.

Through its modular structure, the platform can be used to achieve basic HMI and machine control functionality as well as advanced operational support features including; telematics, wireless applications, video systems, GPS positioning applications and integration of Smart devices.

With LinX Software Suite you have a complete platform for realizing multifunctional equipment HMI and control systems without software limitations.

crosscontrol
MAKING MACHINES SMART, SAFE AND PRODUCTIVE

LinX. software suite

LINX SOFTWARE SUITE

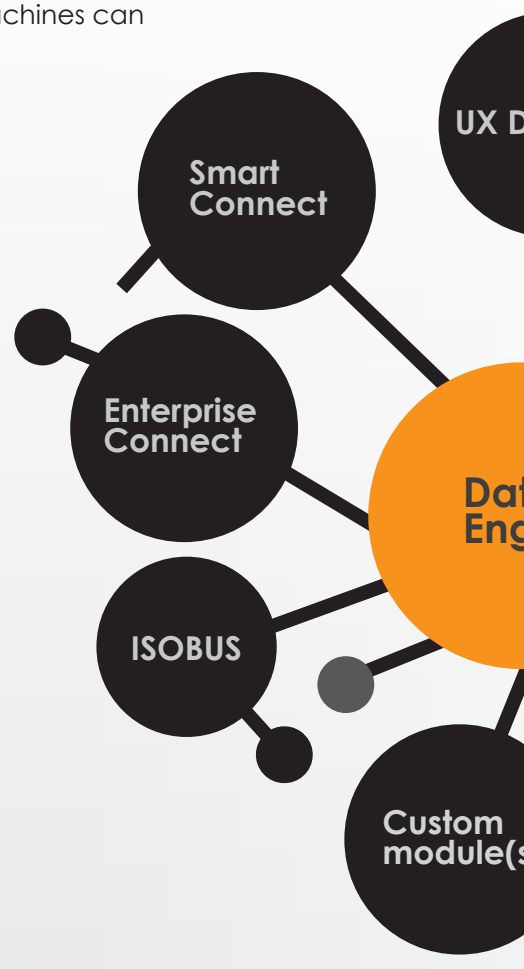
Open and modular software platform for all aspects of Human-Machine interaction.

Data Engine is the key module for achieving the open and scalable architecture of LinX Software Suite. It efficiently handles routing of communication inside the system and makes all signals available to the different application modules. With open and documented interfaces, Data Engine integrates the application modules to form a versatile software platform.

UX Designer is the LinX application module for advanced user interfaces, prepackaged with a set of graphical components for human machine interaction. Components are easily configured with a look'n'feel and functionality to fit a specific machine application. With the Qt/QML tool box and hardware acceleration in CCpilot displays you have the means to create a premium user experience quickly and easily. UX Designer also features a full-blown C++ environment, enabling the integration of your legacy software and providing the freedom that software developers expect from a modern UX design framework.

Smart Connect is a LinX application module for easy integration of Smart devices in your equipment control system. Smart Connect uses Qt/QML to easily create custom made apps for smart devices. Apps connect to the vehicle system and can provide a range of value-adding functions, including remote GUI app, "My equipment" app, Service Technician app and any other needed application. You use the same tools, the same knowledge and the same graphics and software assets as you use for creating the in-cab display GUI. With Smart Connect you can build and deploy apps for iOS and Android.

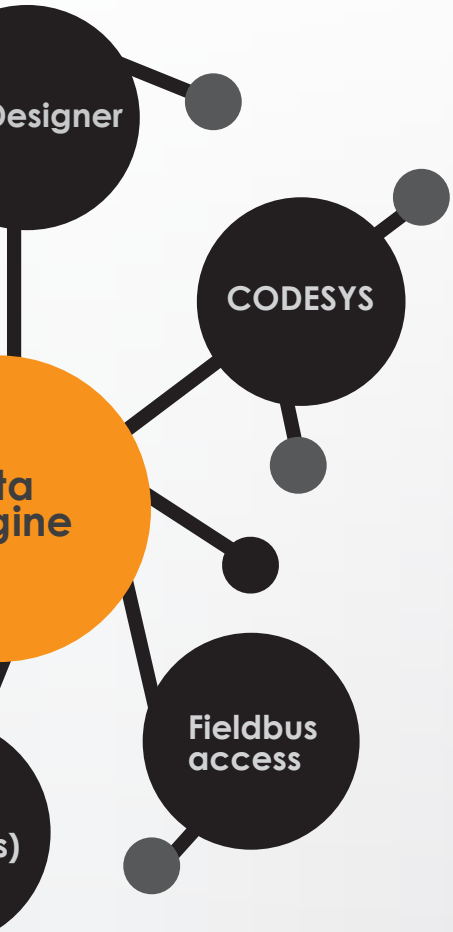
Enterprise Connect is a complete Telematics system, with on-board data collection, GNSS positioning, wireless communication, cloud hosting and back-office web server for big data analysis and reporting. Unlike other telematics solutions, Enterprise Connect is seamlessly integrated with the vehicle control and HMI system. The on-board software module - a soft telematics controller – can access all signals in the system via the Data Engine. Simple configuration in UX Designer allows the set up of which signals to monitor, under which conditions to send data and other functions. Using the web interface to remotely start machine functions, set the machine service mode, unlock new feature levels and also broadcast new and updated software to one or many machines can easily be realised.



CODESYS is a state-of-the-art soft PLC application module in LinX Software Suite. CODESYS provides a fieldbus network infrastructure out-of-the-box which includes CANopen, J1939 and Modbus. It features a powerful environment for developing control logics where you can choose between 6 different PLC programming languages (IEC 61131-3). And it comes with a module for fast realization of GUIs. Combined, these features give you a powerful framework for fast realization of a complete control and HMI system.

"Choose from a range of software application modules to realize your total HMI system"

Fieldbus Access is a LinX module for fieldbus management with J1939 and CANopen available out-of-the-box. With Fieldbus Access you can shortcut the low-level complexity around fieldbuses and focus your resources on value-adding application development. Easy configuration in UX Designer allows you to set up the fieldbus you want to use and the signals and bus specific diagnostics to access and apply as needed. For J1939 you can just drag and drop the needed signals from the signal database and then they become available for the other LinX modules.



ISOBUS is a module in LinX enabling a display to be used as a terminal for any connected implement that follows the ISOBUS standard (ISO 11783). It includes Universal Terminal (UT) and Task Controller (TC) functionality. The UT is a plug-and-play user interface for the implement, visualizing data from the implement and allowing the user to control the implement from the display. The TC main purpose is to automatically handle section and rate control on the field and then report back the actual result. The TC can also manage farm resources and farm activities in the field.

Custom modules with proprietary software, 3rd party software or software from code generation tools can be integrated with LinX via the Data Engine. Its efficient management of communication and signals makes integration easy, enabling a totally integrated HMI system, with your legacy software included.

LINX SOFTWARE SUITE OVERVIEW

Platform overview

- Open, modular and hardware independent Software application platform based on Linux/Qt
- Runs on all CrossControl display and controller products with advanced ARM or x86 cores
- Runs on CCpilot displays in the size range 3.5'' to 15'' – enables software re-use between different display programs
- Preconfigured project templates for CCpilot displays
- Enables setup of HMI systems in vehicle network systems with minimal coding skills required/needed
- Supports advanced programming in C/C++
- Intel x86 compiler: Linux/gcc
- ARM compiler: Linux/gcc
- System requirements – developers machine
  - Windows (min. Windows XP)
  - 2 GB of RAM
  - 2 GHz or faster CPU
- Development environment, examples and other documentation available on **support.crosscontrol.com**

Application modules overview

UX Designer
- Support for scalable widgets
- Fully customizable graphics
- Choose between QtWidgets and QML/QtQuick2
- CSS support
- Localization and Multilanguage
- Modern features like alpha blending, antialiasing, animations, transitions and OpenGL
- Hardware accelerated graphics with QML
- Support for multiple interaction technologies, touch, keyboard and pointing devices
- Analog and digital IP video
- Full featured C++ compiler and debugger
- QtCreator used as development tool

CODESYS
- CODESYS 3.5.x
- SoftPLC fully compliant with IEC 61131-3
- Support for I/O access
- Integrated fieldbus communication
- Complete PLC application development and debugging capabilities, including control and graphics

Data Engine
- Internal communication with content independent signal interface
- Open API for adding custom software components; e.g. proprietary software
- Debug application on signal level

Fieldbus Access
- CAN data access made available by configurator as QtCreator plugin
- J1939 support with drag'n'drop from built-in signal database
- CANopen support (coming soon)
- Raw CAN communication support

Smart Connect
- Create apps for iOS and Android devices
- Preconfigured to connect to control system via Data Engine
- QtCreator with templates already prepared to build connected apps

Enterprise Connect
- Full blown telematics solution – on-board data collection, GNSS positioning, wireless communication, cloud hosting and back-office web clients
- Soft telematics controller - configure which vehicle data should be sent to cloud and when
- Standard web report package included
- Cloud hosting included
- Software broadcasting
- Remote services

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