Parker UX Toolkit
Software Tools
Electronic Control Systems
Increase productivity of your machine by having a centralised control unit that is amazingly user-friendly. Parker offers the tools to create a premium human machine interface (HMI) for your machine.

It is an agricultural, bus, construction or forestry solution; you can combine all essential applications into one easy-to-use HMI display. Include all the functions your customers may want; the number of apps is unlimited. It’s completely your design.

Create an Efficient and Unique Interface for Your Machine

Core Functionality
To operate the machine, create functionality apps for instrumentation, controls and adjustments, such as dashboard, ISOBUS and harvester head control.

Efficiency
Design applications such as auto-steering, auto-levelling, weighing management, fleet management, augmented camera views, bus route manager, maps and navigation applications to help operators’ daily work.

Reduce Downtime
Reduce downtime when performing the core job by creating diagnostics, prognostics, integrated documentation, geofencing, immobiliser and load moment indicator apps.

Entertainment/Infotainment
Bring all entertainment and infotainment systems into one display, such as the mobile phone app, media player, radio and bus sign management.

Personal Tools
Provide tools like a journal, calculator and calendar to help the operator increase their productivity.

Parker UX Platform

Move Your Business into Apps
Parker UX Platform (UXP) is an apps-based platform that can be used to develop human machine interface (HMI) products for mobile machines and vehicles. The platform is designed to enable separation of system functionality into separate apps. The list of advantages for using separate apps is impressive: quick independent development, flexible installation, individual value-added interface into your machine and many more. It gives you the possibility of integrating your own designers’, partners’ and third-party capabilities into one product.

Build Your Own User Experience
This is a platform for innovation. It is full of possibilities, implementing both your essential functions and the most amazing ideas. Parker UX Platform provides an incredible PC toolchain to create your own unique HMI product, which responds particularly to your customers’ needs and supports your brand success. With Parker high quality displays, we will give you a possibility to offer a great experience in the machine.
The Parker UX Toolkit allows designers and developers to focus on delivering successful solutions. We provide all the building blocks to deploy the apps easily, with a short time-to-market and comprehensive life cycle management. All Parker app examples and ready-made components can be utilised and modified freely.

**Design Customised Plugins**

With these software you can develop protocol layers to extend communication capabilities, advanced QML components with C++ and separate platform processes for heavy calculations. Plugins are packaged and imported into a part of Parker Application Designer’s application projects.

**Define the Control System and Application Frames**

- **System Project**
  - System project provides a way to define the following:
    - Machine communication
    - Select display product
    - Component style guide and themes
    - Application life-cycle animations
    - Mandatory languages to be translated
    - System security
    - User groups

- **System-specific data only needs to be defined once for all your display apps. The app developer can rapidly start to build value-added functions instead of wasting time with re-defining the infrastructure.**

**UXP Style Guide & Themes**

Parker offers a style guide with a professional default theme, which can be utilised and modified freely to suit your brand and needs. A consistent layout which can be utilised and added functions instead of wasting time with re-defining the infrastructure. A consistent layout which can be utilised and added functions instead of wasting time with re-defining the infrastructure.

**Intelligent Data Management**

Create amazingly fast, reliable communication between machine and app by using drag and drop protocol layers.

Parker provides device suite, which implements an interface into many hardware devices and PC00 suite for standard communication with CAN bus. Our communication suite includes generic protocols for extracting, generating and manipulating data. With this special ‘block library’, you can define and manage different communication interfaces in your machine, such as CAN, Ethernet, Bluetooth and USB. System functionality can be expanded by creating new devices and protocols to manipulate the real world data. Parker’s data management includes efficient in-built diagnostics and alarm features for the data signals. Each signal path provides information about its health, which can be utilised with U1 components. For example, a gauge can change its pointer colour or blink the pointer if the corresponding data signal health has some problems. An alarm can be created for each signal path health issue and submitted to other apps, it can be displayed on top of the menu bar or logged in the notifications app for later diagnosis purposes.

**Example:** Engine controller broadcasts EEC1 message containing engine RPM and torque values. Display receives the message and extracts engine speed from the message data. Gauge subscribes the engine speed data.
With Parker UX Toolkit you can produce great looking HMIs displayed with rugged and high-performance Parker products.

**Operate**

Parker offers flexible and intelligent features to view the machine data, and works efficiently and intuitively through a one touchscreen display. Operators can run parallel applications, swipe to switch between running applications, change display orientation runtime, split the screen and – according to machine functions or other connected devices – always see the correct application on display.

**Distribute**

Parker Application Designer packages the application content (files) into Debian packages, including necessary dependencies to the system. The Parker System Certifier tool's key purpose is to certify and encrypt software packages to prevent unauthorised software installations. Encrypted packages can be safely transferred over a public network. System Certifier is intended only for OEM’s use. Certified packages can be installed into Parker display products with the Parker Maintenance App. With this app, customers can install new, update existing and remove unnecessary apps, as well as see the current software versions.

**Test and Simulate**

Parker Application Designer provides a run-time environment to simulate the developed user interface, evaluate GUI appearance and test UI functionality. For testing purposes, it is possible to launch the application directly from the tool chain to the device by connecting Parker Pro Display to Parker Application Designer via Ethernet. A debugger is provided for a more in-depth test of the application code. The debugging works on both a PC environment and a device via Ethernet.

Parker Application Designer provides the key elements to develop a comprehensive simulation environment for the application. All data management interfaces can be simulated and monitored during the test process on PC or directly on the device via Ethernet.

**Analyse and Profile**

Parker Application Designer contains the code analysing tools to identify potential bottlenecks in code performance. Developers can inspect binding evaluations, and signal handling and pointing operations when running a QML code. Parker UX Platform and Application Designer also provides building blocks for data logging and data analysis.

**User Management**

Parker User Account App offers the possibility of managing different users and user accounts. In each application project the developer can define application specific user permissions. Permissions can be utilised to restrict or allow certain functions and control visible applications for user levels. Developers can also define whether the saved data is system or user-specific information. User-specific data such as dashboards, display brightness and machine settings are automatically updated at the moment of login.

**Diagnose**

Parker Notifications App provides building blocks for data logging and visualise data in many formats. The measure groups, which can be configured runtime, can be logged for further analysis in the tool chain.

**Ordering Part Numbers**

<table>
<thead>
<tr>
<th>Product</th>
<th>Ordering P/N</th>
</tr>
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<tbody>
<tr>
<td>Parker UX Toolkit</td>
<td>88PAD1</td>
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<tr>
<td>Application Designer</td>
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<td>Parker Pro Display</td>
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<td>Pro Display 10 Development</td>
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<tr>
<td>Accessories</td>
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<tr>
<td>M12-USB cable</td>
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1) Intended only for product development use
2) Needed for software installation via USB flash drive

Features will be implemented in upcoming releases.