Advanced Human Machine Interface (HMI) Framework
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Human Machine Interface (HMI) is how human beings interact with a system. HMIs have evolved from the time computers were invented. Most modern HMIs have a touch interface. While most people think of phones and computers when they think of HMI, touch-based HMIs have found their way into cars, factory floors and even everyday utilities like dishwashers and laundry solutions.

Our HMI Capabilities
Tech Mahindra has significant experience in providing embedded design services across industries for over a decade. We offer end-to-end software architecture, development and testing for both embedded and non-embedded devices. With our extensive experience in embedded architecture, we know the areas that must be addressed to make reuse effective. We also provide consulting on architecture selection for HMIs based on requirements. Our HMI capabilities combine design expertise with software architecture and development.

Industry Challenges
- Deliver consistent user experience across product lines
- Improve response times in industrial environments
- Deploy the same HMI for varied hardware specifications
- Deliver the same HMI experience across multiple operating platforms
- Keep pace with rapidly improving HMI technology

Our HMI Solution
Tech Mahindra’s HMI framework is designed for touch screens. The framework intends to enhance functionality and monitor machine parameters efficiently. The framework features reusable software and hardware components and is designed to be used across multiple products, product lines and families. This reusable HMI framework enables delivery of a consistent user experience across product lines and families. The framework can be deployed quickly on any platform and can even be delivered as a ‘built’ solution with customized hardware specifications, based on requirements.

Our ready-built HMI solution featuring our HMI framework is designed to be used across verticals such as Medical, Industrial, Automotive and Telecom:
- Powered by an ARM processor
- Supports Android, Linux, iOS, Win CE
- Supports multi-touch capacitive and resistive touch screens of different sizes
- Supports WiFi, Ethernet, Bluetooth
- USB ports for extensibility
- Remote Diagnostics and programming facilities
- Human Movement Detection
- Compliant to EMI/EMC and environmental tests requirements
- I2C and RS232/RS485 communication interfaces
- Support for integrating camera, speakers and microphone
- Customizable for multiple applications

Reusability is a great thing to have in a framework; it means you can replicate a consistent UX across products, product lines and product families.
Some Applications

Automotive
• In-car navigation systems
• DAS
• Infotainment

Consumer
• Set-top boxes
• Appliances like refrigerators, washers, etc
• Gaming consoles

Industrial
• Process automation
• SCADA and control systems
• Equipment and machinery

Highlights
• Platform and Operating System independent
• Flexible solution with reusable software and hardware components
• DLNA support for sharing digital media over the network
• Enriched multimedia support for social media connectivity, audio, video and games
• Energy efficient
• Supports multiple touch screen technologies like resistive and capacitive touch

Value proposition
• Up to 40% reduced cycle time through re-usable components
• Readily built and deployable applications for accelerated time-to-market
• Ability to customize for any equipment, product or machine
• Practice maturity in the end-to-end design and delivery of hardware, firmware, middleware, enclosures and user interfaces
About Tech Mahindra

Tech Mahindra represents the connected world, offering innovative and customer-centric information technology services and solutions, enabling Enterprises, Associates and the Society to Rise™. We are a USD 2.7 billion company with 84,000 professionals across 49 countries, helping 540 global customers including Fortune 500 companies. Our Consulting, Enterprise and Telecom solutions, platforms and reusable assets connect across a number of technologies to derive tangible business value.

We are part of the USD 16.2 billion Mahindra Group that employs more than 155,000 people in over 100 countries. The Group operates in the key industries that drive economic growth, enjoying a leadership position in tractors, utility vehicles, information technology and vacation ownership.