

# Timesys Software Engineering Services

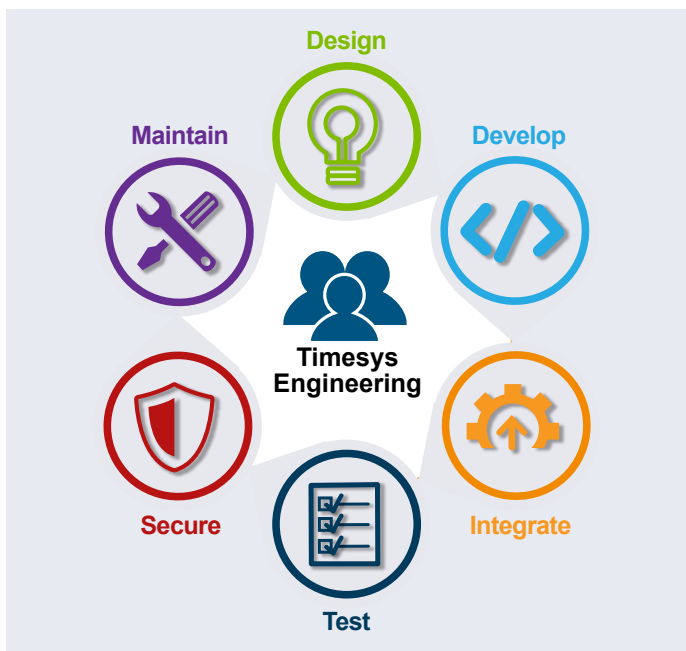
Your Development Force Multiplier: Get to market faster, and with products that are more competitive

At Timesys, our goal is to help ensure your project's success. Timesys Software Engineering Services is your extended software engineering team, bringing high-efficiency development expertise to your embedded device software development lifecycle. We have extensive experience in open source embedded Linux software design, development, integration, testing, and security.

We bring more than just the typical contract engineering approach to our services engagements. Timesys' Software Engineering Services utilize embedded software development best practices that are based on successfully delivering 500+ projects based on open source. Our processes have been shown to reduce typical development cycles by 35 percent or more.

You can rely on our extensive software engineering expertise when you:

- Have tight deadlines
- Need skilled resources
- Want to focus your team on building product differentiation while Timesys focuses on OS
- Want Timesys to maintain your existing product while you focus on new products



## OS Expertise

yocto  
PROJECT



RTOS / Bare Metal



Pioneers of embedded Linux with 20+ years expertise proven on 500+ projects and delivering up to 35% reduction on development cycles



Cybersecurity remediation to bring Linux and RTOS products in compliance with new security policies and close holes identified via threat modeling



Long-term support including best-of-class Vigiles vulnerability monitoring, ongoing BSP maintenance to fix CVEs, and upgrades to current long-term support kernels

## Software Development Lifecycle Expertise

Timesys Software Engineering Services range from consulting to designing, architecting, developing, and securing the platform/application software on various platforms. Our unique value comes from more than 20 years experience on numerous hardware platforms for projects involving bare metal through rich operating system (OS), including secure OS; solving complex problems; and in honing our software expertise overall – from low software layers through to the application layers, including the interface, the user experience, and connectivity.

## Global Reach

Timesys has a comprehensive partner ecosystem and strong industry alliances, enabling us to provide our customers with a complete solution that meets their unique product requirements. Our extensive global partner ecosystem and industry alliances ensures high customer satisfaction and greater productivity – no matter where our customers are located.

## Timesys Software Engineering Expertise

### Engineering Skill Sets

- **System Architecture / Design Consulting** — Requirements analysis and system architectures through code development and integration testing
- **Board Bring Up** — Services for a variety of popular processors including i.MX, Layerscape, QorIQ, AM335x, Core2Duo, and more. Ranging from setting up and booting the board from NAND, SD card, eMMC, etc. — to setting up the kernel and optimizing for various devices and peripherals
- **BSP Customization** — We can take on the primary development and testing role for your project, so you can allocate your resources to other strategic priorities.
- **Yocto Custom Layer Development** — We can help you with Yocto customizations including adding your custom hardware definitions, adding packages, configuration changes, and kernel recipes.
- **Full Stack Development for Devices** — Designing, architecting, developing platform software combined with risk assessment and management for your product lifecycle, choosing technologies that are proven, working on numerous platforms, and meeting the exact performance requirements of your product. From front-end UIs to middleware to low-level embedded software layers, we can help you with any part of the development of the full stack.
- **Firmware Upgrade/OTA** — Design, develop and deliver centralized platforms (embedded Linux, Android, and iOS ) for your enterprise-grade mobile solutions, enabling you to manage and deploy field updates (automating updates in any number of devices and providing self-install capabilities for approved users)
- **Security** — Complete end-to-end device security; we help you implement security early in the design of your device and maintain the security of your software after your product is deployed
- **BSP Maintenance** — We keep your product line updated and secure by maintaining your BSP for you
- **IoT Integration** — With more than 20 years expertise with embedded open source software development, we focus on the embedded portion of the solution to help you empower your “Things” to provide intelligence.

### Embedded Technologies

- **Device Drivers** — Writing device drivers for Audio, USB, networking, peripherals, System-on-Chip, and custom FPGA hardware
- **Bootloaders** — Bootloader modifications, custom and new bootloader development, and fail-safe boot.
- **Secure Boot** — Establish software authenticity all the way from the bootloader to user applications. We can implement:
  - Verified bootloader (NXP i.MX / QorIQ, Qualcomm Snapdragon, TI Sitara, Atmel SAM4S, Xilinx Zynq and more)
  - Kernel verification (FIT image, SoC specific mechanisms)
  - Root filesystem verification (dm-verity, IMA/EVM, FIT image)
- **Boot Time Optimization** — We typically utilize open source technologies; for those requiring extremely fast boot times, we also employ a commercial solution.
- **Power Optimization** — We can analyze your design to determine where power is being consumed as well as implement recommended optimizations.
- **Camera/IPU** — Capabilities include integration of MIPI video cameras, USB camera encoding and decoding, device driver modifications, integration of hardware acceleration into streaming, audio video pipeline, support for H.264 ... and more.
- **UI/HMI** — We leverage our expertise in open source UI frameworks, such as Qt and Cordova, to design and deliver responsive UIs that are intuitive and enable an enhanced user experience.
- **IP Protection** — We provide solutions and services that span:
  - Anti-cloning (IP and Data Protection)
  - Key Management and secure key storage
  - Data protection using encryption — In use, in motion, and at rest
  - Trusted Platform Module (TPM)
  - Trusted Execution Environment (TEE) using Arm TrustZone and OP-TEE
  - Device identity and authentication
- **Embedded Test Framework** — Timesys provides a test framework that integrates easily into your CI/CD pipeline, enabling you to bring in remote testing of your hardware platform and test automation.

## Our Engagement Process



### 1. Scoping Phase

- Rough Order of Magnitude (ROM) Request
- Statement of Work (SOW)
- Purchase Order (PO)



### 2. Development Phase

- Project Scheduled / Engineering Resources Assigned
- Kickoff Call
- LinuxLink Account
- Project Mailing List
- Weekly Status Call
- Milestones / Deliveries



### 3. Completion/Acceptance Phase

- Project Completion
- Project Acceptance
- Billing



### 4. Post-Delivery/Support Phase (Optional)

- Support and Maintenance
- Project Acceptance
- Billing

To learn more about the Timesys Software Engineering Services, schedule a complimentary, no-obligation consultation. Just email us at [sales@timesys.com](mailto:sales@timesys.com) or call us at **1.866.392.4897** (toll-free) or **+1.412.232.3250**.



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