



Digital Experience Solution

Building better-connected smart home services through strategic partnerships and USP innovation

The explosion of connected devices in the home today, which use various technologies such as Wi-Fi, IoT, mesh, and anything 'smart,' presents new challenges to operators — how to maintain seamless, always-on connectivity.

This ever-evolving landscape of connected devices and how consumers are taking advantage of smart home offerings is putting pressure on service providers to deliver additional value-added and customizable services to end-users.

Meanwhile, service providers are also facing a number of growth challenges due to limiting infrastructure and an uncertain future.

The Broadband Forum User Services Platform (USP) specification sets out capabilities to enable Wi-Fi optimization, virtualized services on the gateway, and automation and provides real-time device data to manage the customer experience proactively.

This document provides an overview of the supported USP capabilities in Incognito's Digital Experience solution, which offers a unified approach to device management using TR-069 and TR-369, and the ability to deploy third-party virtualized applications on home and SME CPEs and gateways.

Market Trends and Service Provider Challenges

With the number of connected smart devices and broadband usage going up, connectivity issues and increased Wi-Fi strain are a threat to disrupting life in the home. Customers continue to expect seamless, uninterrupted in-home Wi-Fi connectivity and a reliable network quality wall-to-wall. In addition, the expectation of personalized and customizable services are also increasing. Not all users are the same: many are working from home while others are gaming or streaming. Rising concerns around security and data protection and maintaining responsible online behavior through strong parental controls are feeding the demand for more robust virtualized services and more customized options that will ultimately provide a better customer experience.

These changes result in new pressures for service providers to resolve even more technical issues and maintain always-on connectivity for complex voice, video, and data services. However, this comes with challenges.

Over the next five years, the compound annual growth rate (CAGR) of revenue from broadband access will be down to low single digits. Operators need to find ways to generate new streams of revenue. What's more, service providers are now going up against tech companies like Amazon and Google in the smart home space and, at the same time, are struggling with restrictions due to the architectural limitations of legacy device management platforms.

Did you know?



Smart Home as a service market is expected to grow to \$109 billion by 2025

Impact on Service Providers and Vendors

There is emerging competition from operators, digital companies, and new breeds of home automation service providers. To capitalize on the connected home, service providers and vendors must take a fully comprehensive approach.

Service Providers

- Need to prioritize adaptive, self-optimizing connectivity throughout the home
- Need to support service diagnostics and performance measuring as well as the provisioning of new service and applications to CPEs, all while managing customer privacy and data security

Vendors

- Need to develop market-ready applications to generate new opportunities
- Greater focus on developing partnerships
- Enabling smart home solutions from third-party suppliers

User Services Platform (USP)

The User Services Platform (USP) is a new device management standard that enables a faster, scalable, and more secure way of managing the full lifecycle of connected devices and provides the platform to support the delivery of next-generation virtualized services.

USP is expected to become the target architecture for remote device management over the course of the next decade but will co-exist with current Auto Configuration Server (ACS) TR-069 device management tools for many years.

Did you know?



A recent industry survey found that 75% of service providers plan to deploy USP into their networks within the next 12 months

USP Technical Description

Controllers and Agents

The User Services Platform is a system of Controllers and Agents enabling remote manipulation of software and hardware capabilities. A TR-369 Agent resides on a device and can serve one or more functions such as exposing:

- Local Service Elements to Controllers - by local, this means functions on the device, e.g., Wi-Fi, networking, lights
- IoT Service Elements via an IoT proxy to Controllers - what needs to be managed is not necessarily on the agent. The proxied devices may be connected via technologies other than USP, such as ZigBee or Zwave

With USP, multiple Controllers can manage the same device with strict access control rules to ensure security and data protection. This architecture creates the opportunity to utilize functional-specific controllers (e.g., Wi-Fi optimization) and mobile apps to communicate to devices directly, which differs from ACS, where only one Controller can manage a single device.

Incognito Digital Experience Solution

The Incognito Digital Experience (DX) Solution provides a unified platform to support both ACS (TR-069, SNMP, MQTT) and USP (TR-369) device management architectures, powering new service provider use cases such as multi-AP mesh networking, virtualized applications in the home or SMB gateways, smart home IoT automation, and managed Wi-Fi. USP also enables always-on connectivity and real-time network telemetry.

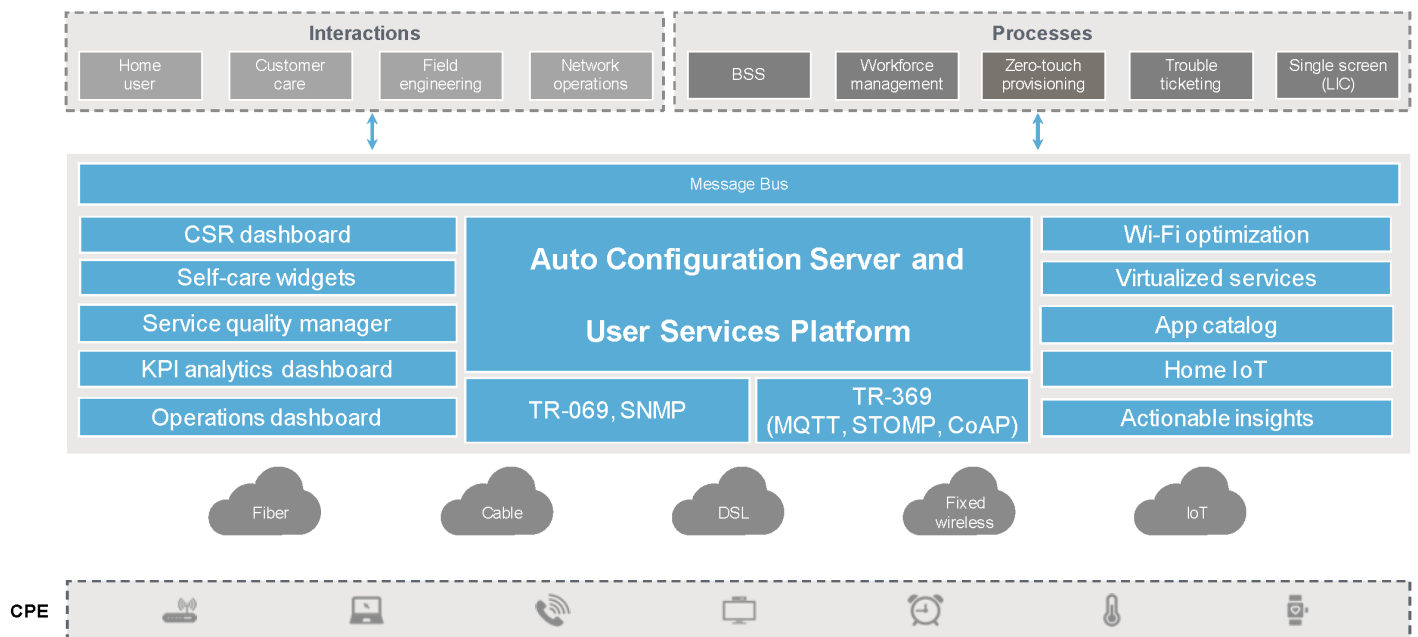


Figure 1 – Digital Experience Solution Architecture

As shown in Figure 1, ACS and USP controllers will co-exist in a hybrid deployment model supporting current TR-069 devices and services while introducing new TR-369 services over time, allowing service providers to continue to drive service innovation. Service provider rollout of managed Wi-Fi services requires always-on connectivity to device data to enable proactive service quality issues resolution. Service providers will benefit from business process and investment re-use by leveraging the Incognito unified device management platform supporting ACS and USP.

Incognito Allows Service Providers to Build a Better Connected Home Experience

How? By offering a unified approach to device management using TR-069 and TR-369, and offering the ability to deploy third-party virtualized applications on home and SME CPEs and gateways. Incognito's solution allows service providers to leverage investments in common tools across ACS and USP – self-care tools, service quality management, and KPI analytics – and deliver managed services, such as network security, smart home automation, traffic prioritization, and parental controls, using virtualized containers.

- The built-in App Store available through Incognito's platform provides flexibility to add and download apps that unlock the full potential of TR-369 devices
- Operators can seamlessly deploy third-party applications into virtual containers on CPE devices and manage them using Incognito's USP controller
- Incognito's USP platform works with any device and USP agent
- Incognito offers fully integrated USP agent and controller logic and a common architecture approach to manage the diverse set of broadband functions
- The solution also has the ability to manage multiple virtualized applications across multiple containers

Why Incognito?

Incognito provides service orchestration software solutions to help service providers manage the next-generation broadband experience. We are a member of the Broadband Forum and help contribute to the development of TR-369. We have over 20 years of experience in helping global service providers accelerate and innovate in-home broadband services with our modular productized suite of software platforms. And we are the winner of multiple accolades for industry innovation with TM Forum, Leading Lights, and Broadband Technology Report.

What does this mean for you?

Incognito brings the right solutions and expertise. We offer access to knowledgeable technology experts and the connections to build a thriving USP ecosystem thanks to our strong and established relationships with device and virtualized app vendors. With Incognito's Digital Experience Solution, operators can gain early market advantage with TR-369 USP today and begin developing premium smart home offers for customers and explore commercial production pilots with vendors.

Opportunities and Benefits

Service Providers

- New revenue streams through value-added services
- Increase service velocity
- Greater customer lifetime value by improving customer satisfaction and retention
- Quick to deploy – no service impact. Traditional firmware upgrades require a device reboot
- A standardized approach to lifecycle management without any firmware upgrades
- Launch market pilots and evaluate services and measure service uptake very quickly
- Launch new virtualized services on customer premise equipment
- Take advantage of a complete USP ecosystem and build a better connected home experience

Vendors

- Gives partners a tested and proven way to work with operators
- Provides a new service delivery channel
- Access to wider service provider market
- Vendor- and technology-agnostic platform
- Secure services – vendors are tested and securely deployed through Incognito's platform
- Strengthen market position against competitors

About Incognito Software Systems Inc.

Incognito Software Systems Inc. provides service orchestration software and services that help digital service providers manage the next-generation broadband experience. Over 200 customers worldwide, including Claro, Cox, Digicel, Globe, and Orange, leverage Incognito solutions to fast-track the introduction of innovative broadband services over fiber, cable, fixed wireless technologies, while delivering a great customer experience. The company is a division of the Lumine Group, a portfolio of Constellation Software Inc., the largest independent software company in Canada. Visit www.incognito.com or follow us on LinkedIn and Twitter.