

Calypso® for Mobile

from Calypso Networks Association

www.calypsonet.org



Open technical standards that enable smart, innovative and secure mobile ticketing for iOS and Android devices.

Calypso for Mobile enables m-ticketing solutions that work across multiple consumer devices, operating systems and networks to support a growing mobile ticketing ecosystem.

Calypso's mobile ticketing offer, based on open standards created **by** the transport community, **for** the transport community, helps operators and authorities provide passengers with a reliable, secure and convenient way to purchase, manage and validate digital transport tickets.

KEY BENEFITS & USE CASES

Calypso for Mobile is suitable for any operator or authority wanting an innovative, futureproof mobile ticketing system.

Utilising the speed and performance of NFC technology, it ensures operators and authorities can provide their customers with the best possible passenger experience.

Featuring advanced security and independent certification, Calypso for Mobile provides trust in a long-term digital ticketing solution, offering passengers more choice and encouraging higher uptake of public transport.

The implementation models allow for a scalable and flexible approach tailored to unique passenger and operator needs, including flexible fare structures and account-based ticketing.

Key functionalities include:

- Transport and multi-application ticketing standard
- Subscription and Pay-As-You-Go ticketing
- Every possible tariff structure
- Shared or specific wallets
- Designed to support MaaS adoption

ADOPTING CALYPSO FOR MOBILE

Calypso Applet, available for iOS and Android devices, and Calypso Host Card Emulation (HCE), for Android devices, enable secure mobile ticketing for public transport.

Both solutions provide the same functional capabilities as our most advanced transport ticketing solution, Calypso Prime, incorporating card-centric and server (account-based) architectures and supporting Mobility-as-a-Service (MaaS) multimodal ticketing.

Calypso for Mobile also offers the possibility to top-up any Prime, Light or Basic card with any Android or iOS phone.



Calypso® APPLET

A software and hardware-based approach that stores data in a secure environment.

- Advanced security via an applet hosted within an embedded Secure Element (SE) or SIM card in a connected consumer device
- Fully emulates a Calypso Prime card on a mobile device and offers the same level of functionality and security as a physical card
- Based on a SE certified to a minimum of EAL4+
- Compatible with all operating systems and Java Card platforms
- Easily and securely downloaded, installed and managed using GlobalPlatform mechanisms
- Requires no changes to existing contactless infrastructure
- NFC functions even when a mobile device is switched off or has an empty battery
- Provided free to CNA members

Calypso® HCE □

A software-based approach that stores limited secure credentials on any Android OS device.

- Based on two core documents: the Calypso HCE specification and the Calypso HCE Guidelines
- Fully emulates a Calypso Prime card on a mobile device, and offers the same level of functionality
- Uses tokenisation mechanisms similar to those used in HCE banking applications to change the mobile application serial number at least every three days, depending on the network choice, significantly enhancing security
- Enhanced trust achieved with Calypso HCE security certification for the protection of data within the mobile phone and the self-declared compliance procedure in the implementation guidelines, about security measures at the system level
- Requires some adaptations to the existing ticketing infrastructure to ensure Calypso-enhanced levels of security
- Full specifications and implementation guidelines provided free to CNA members

CNA certification for mobile ticketing

Security

The Calypso HCE Security Certification (CHSC) scheme for HCE solution providers indicates adherence to state-of-the-art anti-hacking protection levels to protect data within the mobile device.



Functional

Calypso Applet comes with functional certification, ensuring the m-ticketing solution provided by CNA works as a Prime card in each technical context, i.e. with mobile SE and the Java Card platform.



Calypso HCE Security Certification (CHSC) scheme

To help public transport operators and authorities widen their customer base, build trust, and offer more choice in ticketing payments, CNA has worked with the ticketing community to implement additional security requirements into the Calypso HCE solution to achieve a higher level of security.

The certification enhances protection of sensitive data stored on the mobile device, and is based on robust mobile security programmes set up by the banking sector, including the Software-Based Mobile Payment Evaluation Process (SBMP) from global payments specification body, EMVCo, which supports contactless payments made using connected consumer devices and digital wallets.

M-ticketing and interoperability - HCIA

By converging the HCE and Hoplink specifications, Calypso has created a Host Card Interoperability Application (HCIA) that means passengers on transport networks using HCIA can use their Android devices to buy and use interoperable contactless payments across other cities using Hoplink.

This level of interoperability provides enhanced convenience for passengers, on top of the secure, frictionless experience they already access through m-ticketing.



To find out more about how to reach more customers with secure mobile ticketing, please contact the CNA technical team via contact@calypsonet.org.