

**Unicard Limited**

Holes Bay House,
Upton Rd,
Poole
BH17 7AG

8th October 2025

ITSO POST Compliance Certificate

Certificate Number: C00163 – 4(P2)
Product/Service name: Unicard POST Kernel, version Housekeeping - v2.5.3.1 / HL2 - v5.3.14.1
Compliant with: ITSO TS 1000 Specification Version 2.1.5 (Phase 2)

Dear Michael,

ITSO received a request submitted by Unicard Limited, for the certification of the Unicard POST Kernel (software version Housekeeping - v2.5.3.1 / HL2 - v5.3.14.1). As indicated in Certification Test Report (ref. POST- 1729671100 – Unicard POST Kernel - Recertification of C00163-3 to ITSO Specification version 2.1.5 Phase 2), ITSO has found reasonable evidence that the submitted product/service complies to ITSO TS 1000 Specification Version 2.1.5 (Phase 2).

Your product/service will be included in the certified products list, published on ITSO website.

Please note that the present Certification is subject to the following general terms and conditions along with conditions/constraints as detailed in Schedule B:

- i. The present certification is granted based on the ITSO Certification & Compliance Policy, with its validity specified on the Certificate page. For a product or service that utilises a valid ITSO certified sub-assembly, the certificate's validity will correspond to the sub-assembly's expiry date.
- ii. If the Product version number is changed, Unicard Limited must notify ITSO of this fact in writing by supplying the release notes. Any change in the Product that may generate a different behaviour with respect to the ITSO TS 1000 Specification version 2.1.5 standards may be considered a major modification subject to a new evaluation in order to maintain the present Certification.
- iii. The present Certification granted to Unicard Limited for the above referenced Product is non-transferable to any other vendor.
- iv. When request by an ITSO Licenced Operator, the ITSO Registered Supplier must supply a copy of the Test Report.

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Schedule A

The Unicard POST Kernel has been tested with Gemini2k Orbit Crypto, uCrypto readers.

The CM supported by this device is shown in the following table:

CMD2	CMD4	CMD7 SFR1 ¹	CMD7 SFR2	CMD9	CMD10	CMD11	CMD12
✓	✓	✓	✓	✓	✓	✓	✓

¹CMD7 SFR1 is deprecated in ITSO version 2.1.5 – support is retained solely for backwards compatibility.

The IPEs supported are represented in the following table:

IPE	Accept	Create	Modify	Delete
TYP 0 – Private Application				
TYP 2 – Stored Travel Rights	✓	✓	✓	✓
TYP 2 – Stored Travel Rights VGXRef1	✓	✓	✓	✓
TYP 2 – Stored Travel Rights VGXRef2	✓	✓	✓	✓
TYP 3 – Loyalty (Type 1)				
TYP 4 – CTA (Mode 1)				
TYP 5 – CTA (Mode 2)				
TYP 14 IFR1 – Entitlement	✓	n/a	✓	✓
TYP 14 IFR2 – Entitlement	✓	✓	✓	✓
TYP 16 IFR1 – ITSO ID & Entitlement	✓	n/a	✓	✓
TYP 16 IFR2 – ITSO ID & Entitlement	✓	✓	✓	✓
TYP 17 – Loyalty (Type 2)				
TYP 22 FR1 – Area Based Ticket	✓	✓	✓	✓
TYP 22 FR2 – Area Based Ticket	✓	✓	✓	✓
TYP 23 FR1 – Journey Ticket	✓	✓	✓	✓
TYP 23 FR2 – Journey Ticket	✓	✓	✓	✓
TYP 24 – Journey Ticket with Reservations and Special Restrictions	✓	✓	✓	✓
TYP 25 – Travel Voucher				
TYP 26 – Open System Tolling				
TYP 27 – Period Pass (space saving)	✓	✓	✓	n/a
TYP 28 – Carnet (space saving)	✓	✓	✓	n/a
TYP 29 – Multi Journey Ticket (space saving) – FR1	✓	✓	✓	n/a
TYP 29 – Multi Journey Ticket (space saving) – FR2	✓	✓	✓	n/a
Transient Ticket Log FR 1	✓	✓	n/a	n/a
Transient Ticket Log FR 2	✓	✓	n/a	n/a
Transient Ticket Log FR 4	✓	✓	n/a	n/a

Schedule A (cont.)

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The optional functionality supported by this device is shown in the following tables:

Hot listing support				
Single (0C02)	Multi (0602)	Manually Block	Manually Unblock	Storage
✓	✓	✓	✓	1Gb

Action list support		
Single (0C03)	Multi (0603)	Storage
✓	✓	1Gb

Action list Action to Take (ATT) support															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓

Interoperability/parameter list support/multi record receipt of multiple types				
ListFR1 Receive 0Axx ¹	List FR1 Receive 0Bxx	List FR2 Receive 0Axx ¹	List FR2 Receive 0Bxx	Receive multiple types 0600 ¹

¹0600,0AxxFR1 and 0AxxFR2 are deprecated in ITSO version 2.1.5 – support is retained solely for backwards compatibility.

Miscellaneous						
POST HOPS queries ¹	Additional Shell Data 0807	Log 1	UD Frames Generate 0Exx	UD Frames Receive 0Exx	UD Frames Generate 0Fxx	UD Frames Receive 0Fxx
	✓	✓	✓	✓	✓	✓

¹POST HOPS queries is deprecated in ITSO version 2.1.5 – support is retained solely for backwards compatibility.



Schedule A (cont.)

Benchmarking Times

Benchmarking Results

ITSO Test Ref	Test Summary	Average time
POST.0085	CMD2: IPE with Transient Ticket Record Creation	328.5 ms
POST.0781	CMD2: IPE with Value Record Data Group Modification	528.4 ms
POST.0117	CMD7: IPE with Transient Ticket Record Creation	227.0 ms
POST.0783	CMD7: IPE with Value Record Data Group Modification	458.0 ms
POST.1503	CMD12 Non-Pseudo Profile 1: IPE with Transient Ticket Record Creation	265.1 ms
POST.1502	CMD12 Non-Pseudo Profile 1: IPE with Value Record Data Group Modification	371.5 ms
POST.1483	CMD12 Non-Pseudo Profile 6: IPE with Transient Ticket Record Creation	283.1 ms
POST.1482	CMD12 Non-Pseudo Profile 6: IPE with Value Record Data Group Modification	470.2 ms
POST.1505	CMD12 Pseudo Profile 1: IPE with Transient Ticket Record Creation	348.8 ms
POST.1509	CMD12 Pseudo Profile 1: IPE with Transient Ticket Record Creation - Mobile	342.1 ms
POST.1504	CMD12 Pseudo Profile 1: IPE with Value Record Data Group Modification	474.5 ms
POST.1508	CMD12 Pseudo Profile 1: IPE with Value Record Data Group Modification - Mobile	439.8 ms
POST.1487	CMD12 Pseudo Profile 6: IPE with Transient Ticket Record Creation	364.2 ms
POST.1486	CMD12 Pseudo Profile 6: IPE with Value Record Data Group Modification	584.7 ms
POST.1464	CMD9 NTAG215: IPE with Value Record Data Group Modification	379.4 ms
POST.1465	CMD9 NTAG215: IPE with Transient Ticket Record Creation	464.8 ms
POST.1466	CMD10: IPE with Value Record Data Group Modification	559.6 ms
POST.1467	CMD10: IPE with Transient Ticket Record Creation	341.3 ms
POST.1468	CMD11 Static MIDs Profile2 (Normal): IPE with Value Record Data Group Modification	262.8 ms



ITSO Test Ref	Test Summary	Average time
POST.1469	CMD11 Static MIDs Profile2 (Normal): IPE with Transient Ticket Record Creation	196.8 ms
POST.1474	CMD9 NTAG216: IPE with Value Record Data Group Modification	545.6 ms
POST.1475	CMD9 NTAG216: IPE with Transient Ticket Record Creation	582.1 ms
POST.0097	Benchmark Test CMD4	90.5 ms
POST.1476	CMD11 Static MIDs Profile4 (XL): IPE with Value Record Data Group Modification	319.4 ms
POST.1477	CMD11 Static MIDs Profile4 (XL): IPE with Transient Ticket Record Creation	211.5 ms
POST.1478	CMD11 Random MIDs Profile2 (Normal): IPE with Value Record Data Group Modification	299.2 ms
POST.1479	CMD11 Random MIDs Profile2 (Normal): IPE with Transient Ticket Record Creation	246.1 ms
POST.1480	CMD11 Random MIDs Profile4 (XL): IPE with Value Record Data Group Modification	366.5 ms
POST.1481	CMD11 Random MIDs Profile4 (XL): IPE with Transient Ticket Record Creation	267.6 ms

Schedule B

List of conditions and/or constraints applied by ITSO:

The Unicard POST Kernel does not support the following:

- The reversal of TrxReversal.
- Auto renew before the expiry of the current TYP22 pass.
- Auto renew before all stored tickets are consumed.



Certificate No. C00163 – 4(P2)

ITSO Certificate of Compliance

Supplier: **Unicard Limited**

Product/service: **Unicard POST Kernel**

Version: **Housekeeping - v2.5.3.1 / HL2 - v5.3.14.1**

This is to certify that the above product/service has been tested as required by ITSO for compliance against:

ITSO TS 1000 Specification Version: 2.1.5(Phase 2)

Test Report Ref: POST- 1729671100 – Unicard POST Kernel - Recertification of C00163-3 to ITSO Specification version 2.1.5 Phase 2

This product supports the functions: ITSO **POST** and communicates within an ITSO environment as listed in Schedule A of this Certificate.

This product may only be used by ITSO Licensed Members complying with the conditions and constraints listed in Schedule B.

Signed for and on behalf of ITSO: _____

Name: **Darren Marshall-Sewell**

Title: **Technology Manager**

Dated: **8th October 2025**

Certificate Valid until: **7th October 2027**

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