

**Vix Technology**

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Cambridge  
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20<sup>th</sup> October 2020

**ITSO POST Compliance Certificate**

Certificate Number: C-00061-4  
Product/Service name: VIX PCP6100 Rail Validator with TRACS Software  
Version: SBOM version 214.10  
Compliant with: ITSO TS 1000 Specification Version 2.1.4 Corrigendum 9

Dear Rob,

ITSO received a request submitted by Vix Technology, for the certification of the VIX PCP6100 Rail Validator with TRACS Software (software version SBOM version 214.10). As indicated in Certification Test Report (ref. POST-1583851973 VIX Rail Validator PCP6100 with TRACS Software), ITSO has found reasonable evidence that the submitted product/service complies to ITSO TS 1000 Specification Version 2.1.4 Corrigendum 9.

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 on the basis of the ITSO Certification & Compliance Policy and therefore is valid as of today and will expire 7 years from issue, however if the Product/service contains a sub-assembly, the above referenced product will only be valid if the sub-assembly holds a valid ITSO certificate.
- ii. If the Product version number is changed, Vix Technology 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 2.1.4 corrigendum 9 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 Vix Technology 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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VIX PCP6100 Rail Validator with TRACS Software

## Schedule A

The VIX PCP6100 POST consists of a not-always-online rail validator and depot PC (TRACS) communicating with HOPS. The PCP6100 connects periodically to the TRACS device manager via ethernet (over wired or mobile data channels). The PCP6100 uses FTP to exchange data with TRACS; this data is in a proprietary encrypted format over a private network. The TRACS software converts between this format and standard ITSO XML. The TRACS depot software communicates with the HOPS using XML file-exchange on a frequent periodic basis. The POST is mounted on a short pillar on the rail or tram platform (often multiple installations per platform) to allow passengers to tap in and out of journeys. It does not directly control physical access such as a gate.

The CM supported is shown in the following table:

CMD	CMD2	CMD4	CMD7	mCMD2
Customer Media Definition	✓		✓	✓

The IPEs supported are represented in the following table:

IPE	Accept	Create	Modify	Delete
TYP 0 – Private Application				
TYP 2 – Stored Travel Rights	✓	✓	✓	
TYP 3 – Loyalty (Type 1)				
TYP 4 – CTA (Mode 1)				
TYP 5 – CTA (Mode 2)				
TYP 14 – Entitlement	✓	✓	✓	
TYP 16 – 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)				
TYP 28 – Carnet (space saving)				
TYP 29 – Multi Journey Ticker (space saving) – FR1				
TYP 29 – Multi Journey Ticker (space saving) – FR2				
Transient Ticket Log FR 1	✓			n/a
Transient Ticket Log FR 2	✓			n/a
Transient Ticket Log FR 3	✓			n/a
Transient Ticket Log FR 4	✓	✓	✓	n/a

## Schedule A (cont.)

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

Hot listing support			
Multi (0602)	Manually Block	Manually Unblock	Storage
✓			100,000 items

Action list support		
Single (OC03)	Multi (0603)	Storage
✓	✓	30,000 items

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	List FR1 Receive 0Bxx	List FR2 Receive 0Axx	List FR2 Receive 0Bxx	Receive multiple types 0600

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

RSPS3002 Rail Supplementary Functions							
Check in	Check out	Undo Check in	Break of Journey	Inter- change	Pass Activation	Lists	Inspection
✓	✓	✓	✓	✓	✓	✓	

## **Schedule A (cont.)**

### **Benchmarking Times**

**Average in milliseconds (ms)**

	<b>Average</b>
<b>POST.0085 – Benchmark Test CMD2: IPE with Transient Ticket Record Creation</b>	236ms
<b>POST.0781 – Benchmark Test CMD2: IPE with Value Record Data Group Modification</b>	209ms
<b>POST.0117 – Benchmark Test CMD7: IPE with Transient Ticket Record Creation</b>	180ms
<b>POST.0783 – Benchmark Test CMD7: IPE with Value Record Data Group Modification</b>	152ms

### **Device Image**



## **Schedule B**

List of conditions and/or constraints applied by ITSO:

The PCP6100 rail validator does not support the following:

- i. TrxReversal and reversal of TrxReversal IR1 and IFR2.
- ii. Generation of 0310 Supplementary Data Message.
- iii. Generation of 0801 Supplementary Data Message.
- iv. Generation of 0807 Additional Shell Data.
- v. Removable memory modules.
- vi. Currency usage other than Currency Code = 0.
- vii. Change of STR owner.
- viii. Manual top up.
- ix. Prompt for Companion Allowed.



Certificate No. C-00061-4

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# ITSO Certificate of Compliance

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Supplier: **Vix Technology**

Product/service: **VIX PCP6100 Rail Validator with TRACS Software**

Version: **SBOM version 214.10**

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

**ITSO TS 1000 Specification Version: 2.1.4 Corrigendum 9**

**Test Report Ref: POST-1583851973 VIX Rail Validator PCP6100 with TRACS Software**

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:** Certification & Compliance Manager

**Dated:** 20<sup>th</sup> October 2020

**Certificate Valid until:** 19<sup>th</sup> October 2027

Certificate Number C-00061-4  
VIX PCP6100 Rail Validator with TRACS Software

Registered address Aurora House, Deltic Avenue, Milton Keynes, MK13 8LW