

# Calyпсо

## Networks Association

### CALYPSO SPECIFICATION

## PO Certification Process Guidelines

*The information contained in this document is not public. This document may be accessed at  
<http://www.calypsostandard.net> or <http://www.calypsonet-asso.org>*



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## Revision List

Version	Date	Modifications
1	13/12/2019	First published version
2	19/12/2019	Editorial improvements
3	16/01/2020	<ul style="list-style-type: none"><li>Added a 'Multi 20' profile in Calypso Prime list of profiles</li><li>Requested to provide both Classic and Reference structure for a Calypso Light certification.</li></ul>

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## ACRONYMS

AID	Application Identifier
CB	Certification Body
CNA	Calypso Networks Association
DF	Directory File
ICS	Implementation Conformance Statement
LID	Long File Identifier
PO	Portable Object
NC	Non-conformity
SFI	Short File Identifier

## TERMS AND DEFINITIONS

### **Certification Body:**

Third party entity, providing written assurance that a product, service or system meets specific requirements. In this certification scheme, PAYCERT.

### **Certification Committee**

Committee made of:

- A Certification Body representative
- A CNA representative
- Members of the Expertise Committee (not related to a vendor)

In charge of assisting the Certification Body in the analysis of the results provided by the Laboratory and the decision of allocation of waivers. It may help the Certification Body to solicit the Expertise committee for questions relating to Calypso specifications.

### **Certification Letter:**

Document issued by the Compliance Evaluator to the Vendor when specific conditions are fulfilled (valid evaluation test report, positive technical opinion, product compliance towards specifications).

### **Certification Report**

Document issued by the Certification Body to the Vendor, assessing the compliance of the Product with the Standard.

### **Compliance Evaluator**

Representative of the Certification Body in charge of the management of the certification process.

### **Discrepancy**

See Non-conformity.

### **Evaluation (Certification Body):**

Process defining the compliance level of a product or a system, based on the Laboratory test report, Laboratory technical opinion and certification requirements conformity.

### **Evaluation (Laboratory):**

Designates the test sessions carried out by a Laboratory. Should not be confused with the Certification Body Evaluation which designates the compliance assessment.

**Expertise Committee:**

CNA working group in charge of the question of PO certification (WP5.3) made of experts of CNA members.

This committee is in charge of examining the questions or clarifications, submitted by the Certification Body or test labs, related to CALYPSO specifications. The outcome of the expertise committee will be released in a document "CALYPSO implementation notes" [REF 10].

**Functional Test Report:**

Final functional report of the tests performed on the Product by the Evaluation Laboratory.

**Implementation Conformance Statement (ICS):**

Structured document completed by the Vendor which lists all information needed for the product identification and for the progress of the evaluation process (implementation options, configuration details ...).

**Non-conformity:**

A gap between the expected (defined by the standards) behaviour of the product and the observed product observed behaviour. A Non-conformity may also be called a discrepancy.

**Portable Object:**

Any type of portable device that implements ISO/IEC 14443 contactless interface. For example: a contactless Smartcard, a mobile phone with contactless communication (NFC), a wristwatch with an embedded contactless component.

A CALYPSO portable object is any portable object containing at least one application compliant with the CALYPSO specification Revision 3.

A PO is said native when the CALYPSO OS is implemented in the native language of the microprocessor. A Java card PO is a CNA CALYPSO applet embedded in a Java Card platform

**Product:**

Product, system or solution for which the certification of compliance with the Standard is requested.

**Standards (or Specifications):**

Set of defined documents detailing requirements to be met by a PO in order to be certified.

**Test Laboratory:**

Entity in charge of the evaluation of the product, service or system which is candidate for certification.

**Test Tool:**

Test solution implementing the test plan defined by CNA.

**Vendor:**

Provider of the PO which is candidate for certification

**Waiver:**

Agreement, given by CNA, that Vendors do not have to comply with a specific requirement making it optional for implementation and certification. A waiver is always limited in time.

## 1 OVERVIEW

### 1.1 CNA Mission

CALYPSO is the electronic ticketing standard which defines the secured dialogue between portable objects and terminals.

Calypso Networks Association (CNA) is a non-profit organization formed by the CALYPSO founders to promote, maintain and enhance the CALYPSO technology.

One of CNA's missions is to implement a certification policy that ensures that the elements of a CALYPSO system comply with the specifications.

### 1.2 Context

Early 2011, CNA initiated a technical working package, WP 5.3, with the objective of delivering a Calypso PO Functional Test Plan, relying on the specification of **CALYPSO Prime** Rev. 3.1, to ensure the compatibility at the applicative level of the Portable Objects (PO).

Since 2014, more than 25 products have received a **CALYPSO Prime** Rev. 3.1 certificate, including native cards and Java Card platforms with CNA applet.

The **CALYPSO Prime** Rev. 3.2 Certification Scheme is available since the beginning of 2018, and the test plan can check the Rev. 3.2 mode, which is an additional feature that was not present in previous versions.

According to the product features declared by the Vendor in its Submission Form, CNA may either grant a **CALYPSO Prime** Rev. 3.2 certificate or a Rev. 3.1 one.

In 2016, CNA published the first version of the specification of **CALYPSO Light**, a PO application dedicated to mid-range products. Mid-2018, the Calypso Light test tool was ready for a Calypso Light certification process.

By the end of 2019, 6 products have been certified **CALYPSO Light**.

### 1.3 Object of the Document

This document presents the *Calypso PO Certification Scheme*, i.e. the infrastructure that is used by CNA in granting certificates for PO in compliance with either the **CALYPSO Prime** specifications or the **CALYPSO Light** specifications.

### 1.4 Calypso References

The following documents, in whole or in part, are referenced in this document and are indispensable for its application. For dated references, only the cited edition applies. For undated references, the latest edition of the referenced document (including any amendment) applies.

The CALYPSO documents are available in the Calypso Technical Support Web Site (<http://www.calypsostandard.net/>).

Index	Reference	Document Title	Version
[REF1]	060708-CalypsoAppli	Calypso Revision 3 Specification Portable Object Application	3.3 Sep 2019
[REF2]	170101-CalypsoLightApplication	Calypso Specification Light Application for Portable Objects	1.2 Sep 2019
[REF3]	121003-CalypsoPOTestPlan	Calypso Revision 3 Specification Portable Object Functional Test Plan	Latest version applies
[REF4]	171108-CCLA-TestPlan	Calypso Specification CLAP Functional Test Plan	Latest version applies

CALYPSO Prime Rev. 3.1 and Rev. 3.2 requirements are in the document [REF1].

The CALYPSO Light v1.1 requirements are in the document [REF2].

## 2 PO CERTIFICATION

### 2.1 Scope

The PO certification process results in the issuance of certificates of conformity for the following products:

- CALYPSO Prime rev 3.2 native product
- CALYPSO Prime rev 3.1 native product
- CALYPSO Prime rev 3.1 with Java Card OS product
- CALYPSO Light v1.1 product<sup>1</sup>

The certification of the Rev3.3 specific requirements (PKI authentication) will be available mid-2020.

### 2.2 PO Certification Documents

Useful documents to prepare the certification are available on the following dedicated web site:

<http://www.cna-paycert-certification.eu>

Index	Reference	Document Title
[REF5]	CER/CTR/2008-001	Paycert – Certification Contract
[REF6]	CER/PRO/2007-001	Paycert – Certification Procedure
[REF7]	CalypsoTN001-StartupInfo	Calypso – Technical Note TN001
[REF8]	CNA/FOR/2019-004	Calypso PO Certification Request Form

<sup>1</sup> CALYPSO Light is available in native format only

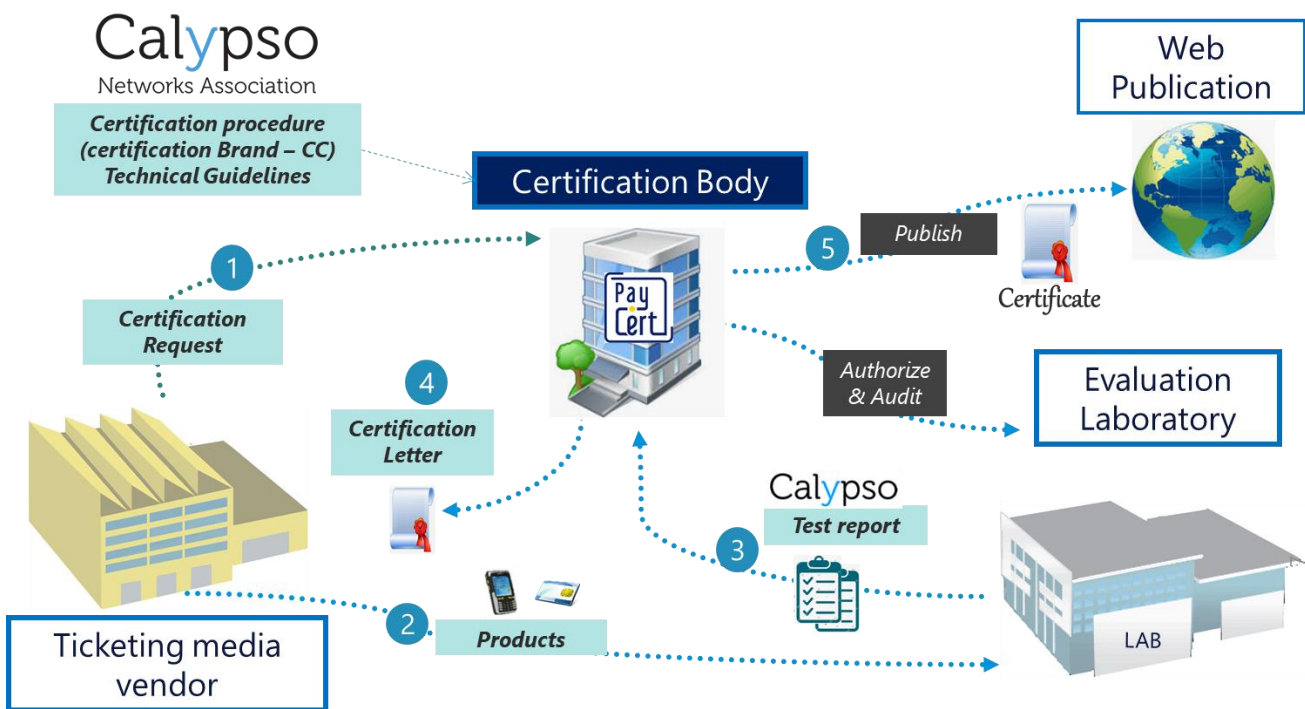
[REF9]	CNA/ICS/2019-001	Calypso PO Implementation Conformance Statement for Calypso Prime
[REF10]	CNA/ICS/2019-002	Calypso PO Implementation Conformance Statement for Calypso Light
[REF11]	CNA/ICS/2019-003*	Calypso PO Implementation Conformance Statement for Calypso Applet
[REF12]	CER/LIS/2019-004	Calypso PO – Implementation Notes

\*The Calypso Applet ICS is based on the Calypso Prime ICS, rev3.1, with many parameters already fixed.

The main document for the preparation of the certification of a PO is the present guideline which references several CALYPSO specifications and technical notes which are useful to manufacture a CALYPSO portable object.

Documents may be updated in the future; it is recommended to visit the web site to check the latest versions available, or to register to receive updated information.

## 2.3 PO Certification Process Flowchart



CNA is the editor of the PO specifications and publishes the guidelines of the Certification process. CNA defines the comprehensive list of functional and security requirements that a product must satisfy.

PAYCERT is the Certification Body that validates and controls the certification program for CALYPSO Portable Objects.

The Vendor provides to the Laboratory the PO which is candidate for certification.

The Laboratory is accredited by PAYCERT.

CNA and PAYCERT manage all the communications relating to the PO Certification.



## 3 GOVERNANCE OF THE CALYPSO PO CERTIFICATION SCHEME

### 3.1 Vendor Registration

For any new Vendor, PAYCERT must receive both elements as pre-requisites of the Certification:

- A signed Certification contract with PAYCERT ([REF5]). The entire certification process is described in PAYCERT [REF6] document.
- A valid Manufacturer/Software Calypso ID<sup>2</sup>.

PAYCERT checks the validity of the Vendor's Calypso Identifier in a list of referenced ID updated periodically by CNA. In case of absence of the Vendor's ID in the list, PAYCERT contacts CNA to obtain confirmation of the validity of the identity. If CNA raises any issue concerning the Vendor's ID, the certification process cannot proceed.

### 3.2 Certification Request and ICS reception

Each time a registered vendor decides to submit a PO to certification, the process is initiated by PAYCERT upon reception of:

- a signed certification request form ([REF8]);
- a filled Implementation Conformance Statement (ICS) ([REF9], [REF10] and [REF11]);

When the Vendor wishes to obtain a certificate for a Calypso Prime product, whether it is rev3.2 or rev3.1, he must use the document [REF9]

For a Calypso Light certificate, the Vendor must fill the form [REF10].

To certify a Java Card platform plus the Calypso applet, the form [REF11] must be filled.

These documents must be sent by email to: [info@paycert.eu](mailto:info@paycert.eu)

As described in [REF4], the PAYCERT evaluator reviews the Vendor form and assigns a certification number. A copy of the validated and signed certification request is returned to the Vendor.

The PO ICS is reviewed by the Certification Body. If the ICS is validated, the reviewer assigns an ICS number based on the certification number. Once reviewed and validated, the Certification Body returns the signed ICS to the Vendor and copies it to the Test Laboratory.

### 3.3 Technical Tests Preparation

The Vendor and the Laboratory sign an agreement to set the date and conditions of the technical evaluation process such as:

- laboratory fees,
- evaluation scope (defined in the Information Conformance Statement (ICS))
- number of samples necessary to perform the test plan.

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<sup>2</sup> CNA to provide access to the list of referenced IDs (cf [REF7])

The vendor will need to provide several PO samples according the supported functionalities. Please refer to annexes where the quantities of samples needed for each scheme are indicated:

- Calypso Prime rev3.2 and rev3.1
- Calypso rev3.1 for CNA Applet
- Calypso Light

The definition of the profiles can be found in of the document “*CPOC Profiles definition*” available from the Laboratory.

### 3.4 Evaluation

The Laboratory must start the evaluation with a validated ICS signed by the Certification Body. After the test session is carried out by the laboratory, a formal **Laboratory Functional Test Report** is created, that contains at least the following information:

- A unique report identification;
- Identification of the Test Lab (name, location, ...);
- Identification of the Test Tool and test plan version used for this session;
- Identification of the Vendor and the evaluated PO, including identification of the tested samples;
- Reference of the ICS.

This report indicates the results of the test session. It is sent directly by the Vendor to the Certification Body or by the Laboratory, following validation from the Vendor.

If changes are made to the ICS after the beginning of the evaluation, a new ICS is validated by the Certification Body and transmitted to the Test Lab. The change of ICS shall be stated in the Test Report

### 3.5 Compliance assessment

The compliance assessment is confirmed with the reception by the Certification Body of the **Laboratory Functional Test Report** containing the Vendor’s product test results.

Upon request from the Vendor, PAYCERT may communicate the planned date of the product evaluation phase, with an estimated certification decision date.

PAYCERT proceeds to the evaluation by confronting the product data elements and the Laboratory Functional Test Report with the appropriate CALYPSO specifications.

If the Functional Test Report doesn’t state any discrepancy (and if all additional specific data, if required in the evaluation preparation phase, are present and valid), the PAYCERT representative of the Compliance evaluation can proceed directly to the “Certification Report” redaction phase

If the Functional Test Report states one or several discrepancies, PayCert can request additional PO appropriate specifications and proceeds to the discrepancies classification:

- The Compliance Evaluator considers that the discrepancy impacts neither the product interoperability nor the user experience: The Compliance Evaluator defines this non-conformity as “**minor**” or “**major**”, depending of its importance.

Note that discrepancies evaluated as “**minor**” are not blocking for certification, provided that their number is limited (decision to be taken by the Certification Committee).

A “**major**” discrepancy needs a waiver so that the certificate can be issued. This derogation is granted for a limited period of time with the agreement of the Certification Committee.

- The compliance evaluator considers that the discrepancy impacts either the product interoperability or the user experience: The compliance evaluator evaluates this non-conformity as “**critical**”.

Discrepancies evaluated as “**critical**” are blocking for certification.

In case of questions or clarification needed about the CALYPSO specifications or the test plan, a request can be submitted to the Expertise Committee by the Certification Body, eventually on behalf of the Test Laboratory.

### 3.6 Certification Report

PAYCERT produces a **Certification Report** that contains:

- A complete identification of the product, scope, specifications and certification conditions (resources, certification evaluation date...);
- Details on the evaluation (including non-compliance analysis) on all encountered critical discrepancies that must be eliminated in order to meet the certification criteria;
- If necessary, proposition of corrections and additional tests and evaluations to plan in order to meet the certification criteria;
- Conclusion of the evaluator regarding the conformity assessment of the PO.

### 3.7 Certification Decision

After the Certification report is issued, it is reviewed internally in order to take a decision regarding the certification of the product.

The decision is made by PAYCERT based on the certification report.

If the decision of certification is favorable to the candidate product, the certification evaluator creates a certification letter and updates the website. The certification letter is sent to the Vendor attached to the latest version of the certification report.

If the decision is not favorable then the latest version of the certification report will be sent to the Vendor with the notification of the discrepancies that must be eliminated in order to meet the certification requirements.

### 3.8 Certification Letter Issuance

The PAYCERT certification letter identifies the scope of the certification, the certified product data and the standards used as reference.

The certification letter issued by PAYCERT contains at least the following information:

- Date
- Certificate number
- Vendor name and address
- Commercial name or identification of the certified product
- Certified product type
- Application version
- Version of the CNA specifications against which the product or system has been certified
- References of the Test & Certification Reports
- Reference of the validated ICS
- PAYCERT representative's signature

PAYCERT sends this certification letter, alongside with the latest version of Certification Report, to the Vendor.

### 3.9 Calypso Certification Web Site

The PAYCERT certification letter identifies the scope of the certification, the certified product data and the standards used as reference.

All certification letters are published as a proof for certification users. A dedicated Calypso certification webpage indicates:

- a list of all certified PO (Products reference, specifications, Vendor, date of certification, certification letter)
- a list of habilitated labs
- links to useful documents related to the certification process
- links to CALYPSO NETWORKS ASSOCIATION ([www.calypsonet-asso.org](http://www.calypsonet-asso.org)) and PAYCERT ([www.paycert.eu](http://www.paycert.eu)) websites.

Following a positive assessment, the Certification Body updates the website accordingly. The Vendor can request for temporary non-publication by e-mail to the Certification Body (3 months maximum). To be taken into account this request must be sent before the certificate issuance.

## 4 SPECIFIC CASES

### 4.1 Renewal Request (No product change)

Considering that expiration dates are fixed to 10 years for CALYPSO certificates, Vendors may need to renew an existing certificate without having changed the product.

#### Process Particularities

In that case, the Vendor shall submit a renewal request by ticking the corresponding boxes in the certification request and ICS. In addition to the usual process (cf. §3.1), during the registration phase PAYCERT reviewer checks that the content of the current certification request and ICS matches with the content of documents provided during the initial submission of the Card product:

- The CALYPSO specification version used for the initial submission is still valid.

After the registration phase, tests may be requested on demand of the Certification Body. In this case, the Product is evaluated on a reduced scope and will obtain, in case of successful evaluation, a Certification Letter. The scope of the evaluation is determined by the Test Laboratory and approved by the Certification Body.

## 4.2 Product Change

This process is defined for minor change certification on the Portable object.

The Vendor may request for a minor change on an existing product, by explaining why, in its opinion, the proposed modifications on the existing certified product will not have an impact on the functional behavior of the Calypso portable object.

This certification request will be reviewed and validated by the Certification Body, with the support of the Certification Committee.

The acceptance of this request may be subject to the completion of a certain number of non-regression tests, the list of which is defined by the Certification Committee.

## 4.3 Discrepancy on a Certified Product

When a discrepancy is found on a certified product, CNA will assess with PAYCERT the impact of the discrepancy and may decide to maintain or suspend the certification.

In case of suspension, the Vendor will be informed and will have to pass additional tests to maintain the certification of the considered PO.

## ANNEX 1 - CALYPSO PRIME SET OF PO

### How to provide the requested PO profiles?

This annex defines the set of POs necessary to execute the test plan according to the applicability requirements defined by the Vendor in the Calypso Prime ICS.

In order to minimize the number of PO profiles, the profiles are defined by grouping the needed file characteristics and by requesting applicability constraints. Because some characteristics cannot be respected by the Vendor, this annex explains how to implement the PO samples.

The following points define the rules to provide the PO profiles needed to execute the test plan related to Calypso Prime.

#### Profiles in a set.

Each profile of the set should follow the implementation requested by the following table.

<i>Profile</i>	<i>Implementation</i>	<i>Profile</i>	<i>Implementation</i>
Multi 1	Shall be implemented	Multi 11	Shall be implemented
Multi 2	Shall be implemented	Multi 12	Shall be implemented
Multi 3	Shall be implemented	Multi 13	If DF_IN_DF supported
Multi 4	Shall be implemented	Multi 14	If DF_IN_DF and AES supported (Should be Short AES)
Multi 5	Shall be implemented	Multi 15	If AES supported (Shall be Short AES)
Multi 6	If DESX supported	Multi 16	If AES supported (Shall be Long AES)
Multi 7	If DES supported	Multi 17	If AES supported (Should be Short AES)
Multi 8	If MF supported	Multi 18	If AES supported (Should be Short AES)
Multi 9	Shall be implemented	Multi 19	If AES supported (Should be Short AES)
Multi 10	Shall be implemented	Multi 20	If AES supported (Should be Short AES)

The above card profiles are linked to the version of the test plan applicable in 2020 and are subject to change.

## Profile quantity

The Vendor shall provide at least a given number of samples for each PO profile. These quantities of samples take into account:

- the PO that will be destroyed after the test.
- the tests that request unused PO.
- some PO samples used to run again some test.
- some PO samples that could be broken during the test session.

## POs and Quantities

The quantities of POs for each profile is indicated in the following points. If the PO can support it (for example it has enough memory space), each sample can embed more than one profile. In this case the quantities of POs are set to the higher number between each profile implemented in the PO. An example is proposed in the point "*Example of manufacturer's choice*"

If the manufacturer wants to embed several profiles on the same PO, it chooses the concerned profiles according to its constraints.

## Contact and contactless PO

Profile	Quantities with Transaction Counter > 200 000 & Stored Value Transaction Number ~ 0	Quantities with Transaction Counter ~ 30	Quantities with Stored Value Transaction Number ~ 65 400
Multi 1	24	4(*)	8(*)
Multi 2	8	0	0
Multi 3	4	0	0
Multi 4	4	0	0
Multi 5	6	0	0
Multi 6	4	0	0
Multi 7	4	0	0
Multi 8	4	0	0
Multi 9	4	0	0
Multi 10	4	0	0
Multi 11	4	0	0
Multi 12	4	0	0
Multi 13	4	0	0
Multi 14	4	0	0
Multi 15	4	0	0
Multi 16	4	0	0
Multi 17	6	0	0
Multi 18	6	0	0
Multi 19	6	0	0
Multi 20	6	0	0

**(\*) If the manufacturer cannot personalize the profile with the specific counter value this quantity must be added to the quantity in the first column.**

The quantities of cards listed beyond are linked to the version of the test plan applicable in 2019 and are subject to change.

## Contactless only PO

Profile	Quantities with Transaction Counter > 200 000 & Stored Value Transaction Number ~ 0	Quantities with Transaction Counter ~ 30	Quantities with Stored Value Transaction Number ~ 65 400
Multi 1	16	4(*)	6(*)
Multi 2	4	0	0
Multi 3	3	0	0
Multi 4	3	0	0
Multi 5	4	0	0
Multi 6	3	0	0
Multi 7	3	0	0
Multi 8	3	0	0
Multi 9	3	0	0
Multi 10	3	0	0
Multi 11	3	0	0
Multi 12	3	0	0
Multi 13	3	0	0
Multi 14	3	0	0
Multi 15	3	0	0
Multi 16	3	0	0
Multi 17	4	0	0
Multi 18	4	0	0
Multi 19	4	0	0
Multi 20	4	0	0

(\*) If the manufacturer cannot personalize the profile with the specific counter value this quantity must be added to the quantity in the first column.

The quantities of cards listed beyond are linked to the version of the test plan applicable in 2019 and are subject to change.

### Example of manufacturer's choice

The manufacturer implements PO in mode Contact and Contactless as following:

- PO-01 implements Multi 1 and Multi 2
- PO-02 implements Multi 3, Multi 4 and Multi 5
- Etc ...

For the quantities of each PO, it refers to the line with the higher required number of samples between the concerned profiles.

- PO-01 : (Use of line Multi 1)
  - 24 POs with Transaction Counter > 200 000 & Stored Value Transaction Number ~ 0
  - 4 POs with Transaction Counter ~ 30
  - 8 POs with Stored Value Transaction Number ~ 65 400
- PO-02 : (Use of line Multi 5)
  - 6 POs with Transaction Counter > 200 000 & Stored Value Transaction Number ~ 0
- Etc ...



## POs delivery

Each PO support shall be identified with at least the following information (this information shall be printed on the PO support):

- Company
- Product name or identifier
- Profile name
- Profile feature (TC Value and/or TNUM Value, refer to the table in the chapter 1.5)
- Issuing Date
- PO identifier (Optional)

## ANNEX 2 - CALYPSO LIGHT SET OF PO

### How to provide the requested PO profiles?

This annex defines the set of POs necessary to execute the test plan according to the applicability requirements defined by the Vendor in the Calypso Light ICS.

The following points define the rules to provide the PO profiles needed to execute the test plan related to Calypso Light.

#### Profiles in a set.

Both the profile '*Classic File Structure*' and the profile '*Reference File Structure*' shall be implemented..

#### Profile quantity

The Vendor shall provide at least a given number of samples for each PO profile. These quantities of samples take into account:

- the PO that will be destroyed after the test.
- the tests that request unused PO.
- some PO samples used to run again some test.
- some PO samples that could be broken during the test session.

### POs and Quantities

#### Contactless PO<sup>3</sup>

Profile	Quantities with Transaction Counter > 200 000	Quantities with Transaction Counter ~ 30
Calypso Light Classic	12	4(*)
Calypso Light Reference	12	4(*)

(\*) If the manufacturer cannot personalize the profile with the specific counter value this quantity must be added to the quantity in the first column.

<sup>3</sup> [REF2] specifies that Calypso Light is dedicated to contactless only portable objects

## ANNEX 3 - CALYPSO APPLLET SET OF PO

### How to provide the requested PO profiles?

This annex defines the set of POs necessary to execute the test plan according to the applicability requirements defined by the Vendor in the Calypso Applet ICS.

In order to minimize the number of PO profiles, the profiles are defined by grouping the needed file characteristics and by requesting applicability constraints. Because some characteristics cannot be respected by the Vendor, this annex explains how to implement the PO samples.

The following points define the rules to provide the PO profiles needed to execute the test plan related to Calypso Prime rev 3.1 with Java Card OS.

#### Profiles in a set.

Each profile of a set shall be implemented even if some characteristics can't be respected. For example, even an applicability can be respected, a given profile will be used for others test cases which not use this applicability.

#### Profile Applicability

Each applicability shall be implemented as it is requested in the profile definition. If a requested applicability cannot be respected due to the product capabilities, the profile has to be implemented as much as possible and the PO provider shall declare what is not respected in the profile definition.

#### Profile structure

Each structure characteristic (file number, file type, record number, record size, access mode, key, ...) shall be implemented as it is requested in the profile definition. If a structure characteristic cannot be respected due to the product capabilities, the profile has to be implemented as much as possible and the Vendor shall declare what is not respected in the profile definition.

The following data shall be defined and set by the customizer:

- Application type
- Application subtype
- LID (except for the LID MF)
- SFI
- DataRef: **the DataRef value is free but the defined file sharing shall be respected**

#### Profile quantity

The Vendor shall provide at least a given number of samples for each PO profile. These quantities of samples take into account:

- the PO that will be destroyed after the test.
- the tests that request unused PO.
- some PO samples used to run again some test.
- some PO samples that could be broken during the test session.

## POs and Quantities

### Contact and contactless PO

Profile	Quantities with Transaction Counter > 200 000 & Stored Value Transaction Number ~ 0	Quantities with Transaction Counter ~ 30	Quantities with Stored Value Transaction Number ~ 65 400
Multi 1	24	4(*)	8(*)
Multi 2	8	0	0
Multi 3	4	0	0
Multi 4	4	0	0
Multi 5	6	0	0
Multi 6	4	0	0
Multi 7	4	0	0

(\*) If the manufacturer cannot personalize the profile with the specific counter value this quantity must be added to the quantity in the first column.

### Contactless only PO

Profile	Quantities with Transaction Counter > 200 000 & Stored Value Transaction Number ~ 0	Quantities with Transaction Counter ~ 30	Quantities with Stored Value Transaction Number ~ 65 400
Multi 1	16	4(*)	6(*)
Multi 2	4	0	0
Multi 3	4	0	0
Multi 4	4	0	0
Multi 5	4	0	0
Multi 6	3	0	0
Multi 7	3	0	0

(\*) If the manufacturer cannot personalize the profile with the specific counter value this quantity must be added to the quantity in the first column.

## POs delivery

Each POs support shall be identified with at least the following information (this information shall be printed on the POs support):

- Company
- Product name or identifier
- Profile name
- Profile feature (TC Value and/or TNUM Value, refer to the table in the chapter 1.5)
- Issuing Date
- PO identifier (Optional)