

Guide to Common Personalization

Version 1.0 March 2003



Table of Contents

1. Do	ocument Overview	<i>I</i>
1.1	Scope	1
1.2	Intended Audience	1
1.3	Document Structure	
1.4	Normative References	
1.5	Abbreviations and Notations	
	verview of the Common Personalization Process	
2. 0,		
2.1 2.2	The Infrastructure of Common Personalization Secure Messaging	7
2.2	The STORE DATA Command and Data Groupings	
2.4	The Date Container Formet	Q
2.5		o 10
	5 1 Data Duan austicu	10
2.5	5.2 Personalization Device Processing	
2.5	5.3 IC Card Application Processing	$\frac{12}{12}$
2.5	Process Overview	13
3. Da	ata Preparation	16
3.1	Creating Personalization Data	16
3.1	1.1 Application Provider Master Keys and Data	16
3.1	1.2 Application Keys and Certificates	16
3.1	1.3 Application Data	
3.2	Creation of Data Groupings	17
3.3	DGIs Defined by Common Personalization	18
3.3	3.1 Completion of Personalization	10
	3.2 Restricting the STORE DATA Command after Personalization	18
3.3	3.3 Replacing the initial Security Domain key(s) after Personalization	18
3.4	Multiple Transport Key Capability	20
3.5	Processing Step	21
3.6	Creation of Personalization Device Instructions (Processing Step '0F')	21
3.6		22
3.6	5.2 Support for Migration to New Versions	22
3.6	6.3 Encrypted Data Groupings	23
3.6	5.4 PIN Block Format	24
3.6	6.5 Random Number for Processing	24
3.6	6.6 Group of DGIs in one STORE DATA command	24
3.6	6.7 The PDI Field	25
3.6		26
3.7	Pre-computed APDU Commands (Processing Step '0B')	
3.7		27
3.7		27
3.7	T T T T T T T T T T T T T T T T T T T	28
3.8	Creation of Personalization Log Data	29
4. Pe	rsonalization Device Processing	30
4.1	Processing Step with code action '0F'	30
4.1		30
	1.2 Duo agraina Elau	2.1
	1.2 Frocessing Flow	
4.2	Processing Step with code action '0B'	40

Copyright @ 2003 GlobalPlatform Inc. All Rights Reserved.

The technology provided or described herein is subject to updates, revisions, and extensions by GlobalPlatform. Use of this information is governed by the GlobalPlatform license agreement and any use inconsistent with that agreement is strictly prohibited.



03/26/2003 GlobalPlatform Guide to Common Personalization v1.0		iii	
1	.2.1	Syntax Checking	40
	.2.2	Types of data elements in ICC Return data field	- 40 41
	.2.3	Coding of ICC Roturn Data Field	- 4 1 41
	.2.4	Coding of ICC Return Data Field	- 41 42
4.3		Abstraction from transport layer	- 42 43
		Processing	- •5 44
J. 1	c curu	Trocessing	- 77
5.1		paration for Personalization	_ 44
	.2.1	onalization	- 44 44
	.2.1	Smart Card Requirements	_
	.2.2		- 44 44
		Secure Messaging	_
6. C	ryptog	raphy for Personalization	_ 45
6.1	Key	Zones	45
6.2	Sess	ion Keys	_ 46
6.3	MA	Us	_ 46
6.4	Enc	ryption	_ 46
6.5	Deci	ryption	_ 46
6.6	DES	Calculations	_ 47
7. <i>D</i>		ctionary	48
7.1	List	of data elements	48
	.1.1	of data elements	- 4 8
	.1.2	AID (Application Identifier)	- 48
	.1.3		- 48
	.1.4	CMK (Final Master Key) CMODE (Chaining Mode)	- 48
	.1.5	DTHP (Date and Time)	- 48
	.1.6	ENC (Encryption Personalization Instructions)	- 48
	1.7	GROUP (Group of Data Grouping as part of Personalization Instructions)	- 49
	.1.8	ID_{TK} (Identifier of the Transport Key)	- 49
	.1.9	ID_{OWNER} (Identifier of the Application Specification Owner)	- 49
	1.10	ID_{TERM} (Identifier of the Personalization Device)	- 49
,	.1.11	ISSUERID (Issuer Identifier Data for Personalization)	- 49
	.1.12	K _{ENC} (DES Key for Creating Personalization Session Key for Secret Data Encryption)	
	.1.13	K_{KEK} (DES Key for Creating Personalization Session Key for DES Key Encryption)	- 49
	.1.14	K_{MAC} (DES Key for Creating Personalization Session Key for MACs)	50
	.1.15	KEYDATA (Derivation Data for Initial Update Keys)	50
7	.1.16	KMC (DES Master Key for Personalization Session Keys)	50
	.1.17	L (Length of Data)	50
	.1.18	LOGDATA (Data Logging Personalization Instructions)	50
	.1.19	MAC _{INP} (MAC of All Data for an Application)	50
	.1.20	MACkey (MAC Key)	50
	.1.21		
	.1.22	MIC (Module Identifier Code)	51
	.1.23		
	.1.24	R _{CARD} (Random Number from the Smart Card)	
	.1.25	D (NID OLG /D I NI I)	- 51 51
	.1.26	RANDOM (Random Number) REQ (Required or Optional Action)	- 51 51
	.1.27	CEONO (Caguanga Numban)	- 51 51
	.1.28	SKU _{ENC} (Personalization Session Key for Encryption)	
	.1.29	SKU _{DEK} (Personalization Session Key for Secret Data Exchange)	- 51 51
	.1.29	SKU _{MAC} (Personalization Session Key for MACing)	- 51 52
	.1.31	TAG (Identifier of Data for a Processing Step)	- 52 52
	.1.32	TK (Transport Key)	- 52 52
/		111 (11 mispor 1120y)	12

Copyright © 2003 GlobalPlatform Inc. All Rights Reserved.

The technology provided or described herein is subject to updates, revisions, and extensions by GlobalPlatform. Use of this information is governed by the GlobalPlatform license agreement and any use inconsistent with that agreement is strictly prohibited.



03/26/200	3 GlobalPlatform Guide to Common Personalization v1.0	iv
7.1.33	$TYPE_{TK}$ (Indicator of Use(s) of Transport Key)	52
7.1.34	VERCNTL (Version Control Personalization Instructions)	53
8. Example	es of document	54
8.1 Exa	nples of Data Groupings	54
8.1.1	CPS Demonstrator	54
8.2 Exam	mples of Personalization Device Instructions	56
8.2.1	CPS Demonstrator	56
8.3 Com	pletion of Personalization	57
8.3.1	CPS Demonstrator	57
9. Example	es of APDU mapping to T=0 TPDU	58

Copyright © 2003 GlobalPlatform Inc. All Rights Reserved.

The technology provided or described herein is subject to updates, revisions, and extensions by GlobalPlatform. Use of this information is governed by the GlobalPlatform license agreement and any use inconsistent with that agreement is strictly prohibited.



Table of Figures

Figure 2-1 – Personalization Data by MIC	8
Figure 2-2 – Overview of Smart Card Personalization Data Format	9
Figure 2-3 – Overview of Personalization Data for a Single Smart Card Application	9
Figure 2-4 – CAMS Architecture Diagram	11
Figure 2-5 – Example Personalization Data Layout for one application	12
Figure 2-6 – Example of Personalization Data for one Application for one Card	13
Figure 2-7 – Personalization Input File for One Card	13
Figure 2-8 – Interface between the SCMS and the Loader	14
Figure 2-9 – Interface between the SCMS and the Personalization device	15
Figure 3-1 – Layout of ICC Data Portion of Record	26
Figure 3-2 – Formatting of Personalization Data within ICC Data Portion of Record	26
Figure 3-3 – Pre-computed APDU Command placed in BER–TLV structure	27
Figure 3-4 – Layout of ICC Data Portion of Record	28
Figure 3-5 – Formatting of Personalization Data within ICC Data Portion of Record	29
Figure 4-1 – Personalization Command Flow with Explicit Initiation SCP	32
Figure 4-2 – Personalization Command Flow with Implicit Initiation SCP	33
Figure 6-1 – Common Personalization Key Zones	45
Figure 6-2 – Common Personalization Key Zone in pre-computed APDU commands	45

Copyright @ 2003 GlobalPlatform Inc. All Rights Reserved.

The technology provided or described herein is subject to updates, revisions, and extensions by GlobalPlatform. Use of this information is governed by the GlobalPlatform license agreement and any use inconsistent with that agreement is strictly prohibited.



DOCKET

Explore Litigation Insights



Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time** alerts and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.

