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# ISO/IEC JTC 1 SC 17

Cards and Personal Identification

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## Devices on Cards

Presentation to JTC1 Plenary 2013

Dick Mabbott, Chairman SC17



# Devices on Cards

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- The first NP entitled 'Electronic displays in IC cards' was raised by Germany, dated 7 September 2010



# Scope 'Electronic displays in IC cards'

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- Aiming at achieving a considerable high degree of interoperability for using displays on IC Cards, this standard is expected to address:
  - Display technologies
  - Dimensions of display
  - Physical interface to display
  - Power requirements
  - Position of display on IC Card
  - Optical characteristics, e.g. Resolution
  - Contents and control of display by ICC, or by card terminal or via network
  - Test Methods
- This standardization project concentrates first on definitions related to a display on IC cards, but does not prevent further extensions like a minimal keyboard or other components, when raised by NBs



# Result of NP Ballot

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- The NP passed with 5x nations committed to participate in the work – Canada, China, Germany, Korea (Rep.of) and US
- There were 5x negative votes – Finland, France, Japan, Sweden and UK
- SC17 holds it plenary during the first week of October
- Since the ballot was posted 2010-09-07 and closed 2010-12-08 it was not possible to discuss this NP at the 2010 SC17 plenary



# Allocation of the work within SC 17

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- The scope of the NP cut across the scopes of more than one SC17 WG, e.g. WG1 does Physical characteristics and Test Methods whereas WG4 does Commands
- By the time of the SC17 plenary in October 2011 there had still been no Resolution of Comments for this NP approved the previous December because there was no obvious choice of WG to ask to resolve the various NB comments



# SC17 2011 Resolutions

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- SC17 developed processes for allocating the work from an NP that cuts across more than one WG:
  - one process for NPs originated by the SC itself; and,
  - a slightly different process for NPs raised by NBs
- Germany was requested to raise a second NP covering Input Devices on Cards to complement their previous NP covering Output Devices, i.e. displays on cards
- SC17 agreed to resolve the comments from both NP ballots at the same Resolution of Comments meeting (or if the second NP failed, to resolve the comments of the first NP)

# 2<sup>nd</sup> NP on 'Input Devices on ICC and enhancements of electronic displays'

- 2<sup>nd</sup> German NP circulated 2012-05-26, ballot closed 2012-08-28 and the result posted 2010-09-05, i.e. ahead of the next SC17 plenary in October 2012
- The NP passed with 7x nations committed to participate in the work and only 1x negative vote





# SC17 2012 Resolutions

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- There would be a new multi-part standard addressing both NPs, i.e. Input and Output Devices (ISO/IEC 18328)
- SC17 asked its WG4 to lead the work as the IC “managing” devices was seen as paramount to the security of smartcards
- WG4 was asked to co-ordinate across other interested WGs e.g. WG1 on Physical Characteristics and Test Methods and WG11 on Fingerprint sensor on card
- The scope of the series was to be defined first in Part 1 of the standard
- There was to be a Resolution of Comments for both NPs led by WG4 but involving the other WGs and National Body experts with an interest in the work



# ISO/IEC 18328

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## 3 part standard:

- Part 1** General Framework under the responsibility of WG4 with support from other WGs
- Part 2** Physical characteristics and related Test Methods under the responsibility of WG1
- Part 3** Organization, Security and Commends for interchange, under WG4



# ISO/IEC 18328 Progress

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- Resolution of Comments for both NPs completed by end-August 2013, outcome distributed to SC17 and accepted as closed by resolution at the SC17 plenary in October 2013
- WD3 of Part 1 distributed to SC17 by WG4 end-August 2013
- WG1 issued Part 2 for CD ballot (this ballot period spanned the 2013 SC17 plenary so could not be discussed at the plenary)
- WD2 of Part 3 distributed to SC17 by WG4 by end-August 2013



# Scope of Part 1

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- **Part 1** describes the general architecture of an ICC with additional devices
- As a general principle all activities regarding additional devices are controlled by the ICC
- This principle also applies when additional devices are outside of the card, e.g. external biometrics sensor for match-on-card
- Applicable to all kinds of IC Cards independent of the interface technology, i.e. ICCs with contacts and Contactless ICCs.



# Scope of Part 2

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- **Part 2** defines physical characteristics and relevant test methods for devices on cards, including but not limited to power supply devices, displays, sensors, microphones, loudspeakers, buttons and keypads
- It also covers aspects of co-existence of technologies of devices on the card
- Includes the following aspects:
  - display types, display technologies
  - types of input elements, input element technologies
  - requirements for IC cards containing displays
  - requirements for IC cards containing tactile sensors
  - requirements for IC cards containing biometric sensors
  - requirements for IC cards containing batteries
  - system architecture aspects, and test methods



# Scope of Part 3

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- **Part 3** standardizes the logical interface for an application which supports the usage of electronic devices, supporting the necessary security features defined by ISO/IEC 7816
- Includes design of commands, data structures and security mechanisms to handle the data and handling of devices
- The device is always controlled by the IC chip



# ISO/IEC 18328

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So now the way is clear for our different WGs to progress:

- **WG1** – Physical Characteristics and related Test Methods
- **WG4** – Commands
- **WG11** – Biometric sensors both on and off the card



# Smart Cards versus Mobile Phones

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- What is the difference between a smart card with a display, keypad, an on-board microphone e.g. to support voice biometrics, and a loudspeaker, and a mobile phone ?
- Common sense says look at them. An IC card with Input and Output Devices is not a mobile phone
- Smart cards are designed for a quite different purpose to smart phones and SC17 has no ambition to get into standards for mobiles





# ID-1 versus ID-T Form Factors

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- ID-1 is the normal credit card form factor
- ID-T with “T” for Thickness is a much thicker card form factor e.g. 2 or 3mm thick as opposed to ID-1’s 760µm
- ID-T is useful for two reasons
  - For on-card biometric sensor where 760µm would render any silicon based sensor too fragile to pass the standard bending moment test
  - To accommodate larger electronics package that exceeds 760µm thickness
- The solution is a thicker card but only where it is a Contactless ICC, and a card that is too thick to be inserted in a slot or dip reader, e.g. ATM or Chip-and-Pin POS reader



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# ANY QUESTIONS





# European Multi-Stakeholder Platform on ICT Standardisation (MSP)

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- The MSP advises the European Commission on matters relating to the implementation of standardisation and policy in the ICT field
- It has a rolling work programme for ICT standardisation
- It advises on priority setting in support of legislation and policies
- It identifies specifications developed by ICT fora and consortia for use in EU public procurement and policies

# European Multi-Stakeholder Platform on ICT Standardisation (MSP)

- Areas of activity include:
  - Network security
  - eProcurement
  - Mobile payments
  - Web accessibility
  - eInvoicing
  - eHealth
  - Smart cities
  - Cloud computing
  
- MPS includes representation from ISO



# European Multi-Stakeholder Platform on ICT Standardisation (MSP)

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## **SC17 Resolution 697/13**

SC17 requests that the SC17 Chairman raise at the JTC1 plenary the issue of the extent of ISO involvement within the MSP.

Furthermore SC17 asks that the SC17 Chairman request that JTC1 contacts the ISO representative on the MSP to establish how information regarding the rolling programme of standardisation will be disseminated to relevant JTC1 SCs.

Passed unanimously