ISO/IEC JTC1/SC17/WG8/TF2 N 449
ISO/IEC JTC1/SC17/WG8 N 1062

Minutes of the 23rd meeting of WG8 Task Force 2

held at: Standards Australia
286 Sussex Street
Sydney, NSW 2000, Australia
on: 8th and 11th October 2004

Participants:

Pascal ROUX	Convener
Peter SPALDING	Australia
Franz HUBER	Austria
Reinhard MEINDL	Austria
Jean-Paul CARUANA	France
Frédéric HANAUER	France
Klaus FINKENZELLER	Germany
Michael HEGENBARTH	Germany
Mickey COHEN	Israel
Hemy ITAY	Israel
Hiroshi KARIBE	Japan
Mikio MUKAI	Japan
Yoshihisa TAKAYAMA	Japan
Kelvin LIM	Singapore
Chris STANFORD	UK
David DRESSEN	USA
Marty FRARY	USA
Jim RIDDELL	Visa

OPENING OF THE MEETING

1. The convener opened the twenty-third meeting of WG8 Task Force 2 by welcoming all the participants. He expressed special thanks to Standards Australia for the organisation of this meeting.

ROLL CALL

2. The roll call was not necessary as every delegate knew each other.

REVIEW OF THE MEMBERSHIP LIST

3. An attendance register was circulated during the meeting. The TF2 membership is mentioned in the document WG8 SD2. The regular delegates are requested to register as TF2 members (through their national bodies) to get access to the TF2 documents on the WG8 website.

ADOPTION OF THE AGENDA

4. The agenda (document TF2 N441) was agreed with the following additions:

- E-MRP testing;
- PICC presence check;
- AFI coding for E-MRP;
- Class 1 definition;
- Form factor free option for PICC;
- Revision of ISO/IEC 14443-1.

APPROVAL OF THE LAST MEETING MINUTES

5. The minutes of the twenty-second meeting in London (document TF2 N436) were approved.

REVIEW OF AVAILABLE DOCUMENTS

6. The documents submitted before and during this meeting were as follows:

TF2 N437	Contribution on SD4 proposal number 18	(Gemplus)
TF2 N438	Discussion on ATS of Type A	(Shanit)
TF2 N439	Calling Notice for the 17th Plenary Meeting of ISO/IEC JTC1/SC17 being held in Sydney, Australia on 2004-10-06/08	(convener TF2)
TF2 N440	Working draft of ISO/IEC 10373-6/PDAM4 - Identification cards - Test methods - Proximity cards - Amendment 4: Additional test methods for PCD RF interface and PICC alternating field exposure	(project editor)

TF2 N441	Agenda of the 23rd meeting of WG8/TF2 Sydney, Australia – 8th and 11th October 2004	(convener TF2)
TF2 N442	Contribution to WD 10373-6 AMD4	(Arsenal research)
TF2 N443	Remarks on 10373-6:2001/PDAM1.3	(Oberthur)
TF2 N444	Contribution on presence check	(Philips)
TF2 N445	Working draft of ISO/IEC 10373-6/PDAM5 - Identification cards - Test methods - Proximity cards - Amendment 5: Bit rates of fc/64, fc/32 and fc/16	(project editor)
TF2 N446	Letter to the WG8 Convener regarding realized problems in WG8 N 991, i.e. ISO/IEC 14443-3/PDAM3, with asking WG8 to consider Innovision's concern when resolving the related ballot comments as of WG8 N 1016	(Innovision)
TF2 N447	SD4 - Clarification of CID requirements in ISO/IEC 14443-3	(Atmel)
TF2 N448	Status Summary of Test Criteria and Stresses	(WG3/TF4)

AMENDMENTS TO 14443-2, 14443-3, 14443-4 AND 10373-6 FOR BIT RATES OF FC/8 AND HIGHER

7. No contribution was received.

INTEROPERABILITY ISSUES

8. The document TF2 N447 was presented by David Dressen. TF2 recommended to add this clarification requirement in the document WG8 SD4 for a possible clarification addition in pending amendments of ISO/IEC 14443-4 and ISO/IEC 10373-6.

LIMITED USE CONTACTLESS SMART CARD STANDARDS DEFINITION

9. The convener reported that it had been agreed in SC17 the day before that WG8 and WG1 should jointly develop the two work items for Limited Use Contactless Cards and that WG1 would be responsible for the physical characteristics and WG8 for the all contactless interface and related aspects including the antenna.

10. The document TF2 N446 was presented by the convener. A technical discussion followed and is summarised herebelow:

- Interference with compliant PICCs should be avoided. Consequently, Limited Use PICC should either use a different REQA/REQB code or report as "LU" in its ATQA/ATQB.
- If a different REQA/REQB code is used, the 5 + 5 ms minimum polling cycle may be kept by a “LU reset time” much less than 5 ms (e.g. 1 or 2 ms maximum). So the polling cycle could be "REQA-LU, REQA, REQB-LU, REQB".
- Compliance with ISO/IEC 14443-3 means compliance with all clauses, so any product which does not support the standard anticollision (either type A or type B) is not compliant with ISO/IEC 14443-3.
- Contributions on:
  - simple way of collision detection, without collision resolution (using different REQA/REQB codes or the same REQA/REQB codes),

- simple addressing to avoid writing multiple Limited Use PICC unintentionally,
- simple set of commands,

are welcome.

STANDING DOCUMENT 4, PROPOSALS 11, 20 AND 21

11. Standing document 4, proposal 11 (Improvement of the PCD load modulation reception test)

Problem

The real interoperability problem was once more acknowledged: a compliant PCD and a compliant PICC may show a "communication hole" in the operating volume due to PCD reception. TF2 supported the idea of a normative test of the PCD sensitivity. Jean-Paul Caruana proposed to modify the Reference PICC (annex E) tuning but TF2 finally realised that the modulation angle would not change enough and that such a tool could not measure (and guarantee) the PCD sensitivity.

Development cost

TF2 acknowledged that nobody was ready to develop or pay for the development of the necessary tool. The possibility of a university project was discussed but considered with no guarantee of success.

To assess the possibility of sharing the costs, the convener was requested to ask for a quotation from Leti/CEA to get the cost of such a development and tool, including the PCB design as part of the solution. If standardised, the solution will be described in details in ISO/IEC 10373-6 (and Leti/CEA name may be mentioned as a possible supplier for the tool).

12. Standing document 4, proposal 20 (Bit rate re-negotiation after the initial negotiation)

Technical contributions are still requested (in favour or against). Compatibility with present implementations must be guaranteed, i.e. this re-negotiation must be optional for the PCD and for the PICC (no PICC answer if this feature is not supported). Timeout must be low to really gain time in the transaction. The PICC response must be at the current bit rate. If finally supported by TF2, this option would be integrated in next revision of ISO/IEC 14443-4, not in a pending amendment.

13. Standing document 4, proposal 21 (Communication quality test)

TF2 wondered if the PICC and the PCD should be specified and tested independently against noise (and not as a whole system as described in the technical report 18046 on RFID). If yes, TF2 will need to:

- measure the PICC noise level (but the noise has many characteristics and it is difficult to define the right parameters which describe the PICC noise)
- measure the PCD sensitivity to noise (only to a certain noise to have a realistic/feasible test). A PCD must understand correctly ATQ within a certain noise and shall detect the absence of PICC within noise but no ATQ. This noise should be created by the (new) Reference PICC (see proposal 11).

Technical contributions are welcome. The convener was also requested to ask Leti/CEA about the possibility of noise injection in the new Reference PICC (SD4, proposal 11).

FINALISATION OF WD ISO/IEC 10373-6/AM4 "ADDITIONAL TEST METHODS FOR PCD RF INTERFACE AND PICC ALTERNATING FIELD EXPOSURE"

14. The document TF2 N440 was presented by the project editor. It was then finalised for WG8 decision on CD (PDAM) ballot.

FINALISATION OF WD ISO/IEC 10373-6/AM5 "BIT RATES OF FC/64, FC/32 AND FC/16"

15. The document TF2 N445 was presented by the project editor. It was then finalised (type B, protocol tests) for WG8 decision on CD (PDAM) ballot.

E-MRP TESTING

16. The document TF2 N448 was reviewed by TF2 and the following comments were made:

- 1.1: replace ISO/IEC 10373-1, 3.2 with ISO/IEC 10373-6, 3.1.
- 1.11: OK. TF2 proposed to keep the size of the elementary zones and to increase their number to cover the whole MRP format. The MRP should be tested open and only on the page which contains the chip and antenna.
- 2.1: see ISO/IEC 10373-6/AM5.
- 2.2: For MRP antenna size very similar to Reference PICC (i.e. Class1 antenna), apply 7.1, 7.2 and 7.4 of ISO/IEC 10373-6/AM2 & 4, see also ISO/IEC 10373-6/AM5 for high speed RF interface and locate the MRP in the Test PCD assembly so that its antenna is in the same position as the Reference PICC antenna when tested.
- 2.3: refer to ISO/IEC 10373-6/AM1 to test initialisation, anticollision and protocol defined in ISO/IEC 14443 parts 3 and 4.
- 3: No comments because all applicative layers are out of the scope of ISO/IEC 14443.
- 4.6: ISO/IEC 14443 specifies and ISO/IEC 10373-6 tests the contactless interface seen from PCD and PICC sides. This covers PCD and PICC specifications.
- 4.7: same as 3.2 (to be deleted).

PICC PRESENCE CHECK

17. The document TF2 N444 was presented by Reinhard Meindl. TF2 acknowledged that different implementations of protocol rules exist, so that presence check may not be obvious:

- some PCDs apply rule 6 out of chaining, which is authorised (even recommended),
- rule 10 with empty I-blocks could be used but some PICCs do not answer empty I-blocks.

Therefore TF2 recommended PICC presence check to be described in ISO/IEC 14443-4 next amendment, based on the following possible methods:

Method 1

- The PCD may send an empty I-block and expect to receive an I-block from the PICC. The I-block PICC response could be empty or containing anything (error code…).

Method 2

- Before the first I-block exchange, the PCD may send an R(NAK) block (with block number 0) and expect to receive an R(ACK) block from the PICC (rule 12).
- After the first I-block exchange, the PCD:
  - either may send an R(NAK) block (with current block number) and expect to receive an R(ACK) block from the PICC (rule 12); in this case the PCD should not retransmit its last I-block (exception to rule 6);
  - or may toggle its block number then send an R(NAK) block and expect to receive the last I-block from the PICC (rule 11). (This last I-block may be a long I-block.)

AFI CODING FOR E-MRP

18. How to detect a particular chip quickly ?

For type A communication, an AFI coding could be used in ATS. WG4 reserved tag 49 for an AFI coding in the historical bytes (to be included in ISO/IEC 7816-6).

19. Which AFI coding for E-MRP ?

As ICAO requested a dedicated AFI code (not '3x'), codes '9x' and 'Ex' were discussed. ISO/IEC JTC1/SC31 uses ISO/IEC 15693, not ISO/IEC 14443. 'Ex' code allows to align ISO/IEC 14443 on ISO/IEC 15693 codes '9' to 'C'. Therefore TF2 recommended the following:

- Family: 'E' for travel identity applications (e.g. MRTDs),
- Subfamilies:
  - '1': passport,
  - '2': visa.

20. How to use this AFI ?

TF2 recommended the following:

Tag 49, as allocated by WG4, shall be a variable length tag because a multiapplication PICC shall return all its applications in tag 49. If all the historical bytes do not fit in ATS length, the ATS will be truncated to its maximum length and the total information may be retrieved by an application command such as GET DATA.

Type B Passport + visa chip could answer, according to ISO/IEC 14443-3, 7.9.3.1:

- to REQB(E1) with ATQB(E0 or E1),
- to REQB(E2) with ATQB(E0 or E2),
- to REQB(E0) with ATQB(E0 or E1 or E2),

(to be confirmed by ICAO).

The 4th byte of Application Data will anyway indicate the number of applications in the PICC.

The PCD should not rely on the multiapplication PICC answer. The mechanism for quick selection is the REQB(AFI), whatever the ATQB answer.

Type A "passport + visa" chip should answer with tag 49 applications E1 and E2. Type B E-MRP will also provide the same information with tag 49.

CLASS 1 DEFINITION

21. TF2 agreed to add the following note in WD ISO/IEC 10373-6/AM4, 7.4:

> NOTE This test improves interoperability only if the "Class 1" PICCs antenna size and location is very similar to the Reference PICC (Annex D) antenna size and location. For PICC with different antenna size and/or location other classes may be created with, for each class, a corresponding reference PICC. Next revision of ISO/IEC 14443-1 will include the class(es) definition.

In the new revision of ISO/IEC 14443-1 to be prepared, the class 1 antenna zone definition will be as defined in the document TF2 N415 except a radius of 3 mm to be added on the inner rectangle. No other changes to N415 were agreed, because no contributions were received, except the Axalto one (documents TF2 N418/N430) which proposed no inner rectangle. This proposal was rejected because TF2 thought it cannot guarantee the interoperability.

FORM FACTOR FREE OPTION FOR PICC

22. TF2 agreed that any object whose antenna is “equivalent” to a PICC antenna may be compliant to 14443-2, 3 and 4. This means:

- antenna size (not object size) smaller than ID1, so that test PCD apparatus may be used;
- test of the object by centring its antenna in the DUT position in the test PCD assembly (there may be some distance between the sense coil plane and the object antenna plane due to the object itself).

Preferably, such objects, as any new PICC, should be class 1.

Objects with antenna larger than ID1 may be studied in TF2 only if there is an approved New Work Item, because the present test PCD assembly cannot be used and a lot of work would have to be done.

REVISION OF ISO/IEC 14443-1

23. The physical PICC characteristics were reviewed:

- UV light: WG1
- X-rays: WG1
- Bending and torsion: finished plastic card only, WG1
- Alternating H field: applicable to any form factor (the test is only at PICC resonance frequency and at 13.56 MHz, so the requirement must be only at these 2 frequencies)
- Alternating E field: to be deleted
- Static electricity: finished plastic card only, WG1 if experts available
- Static H field: to be deleted
- Operating temperature: WG1

All characteristics “WG1” should be moved in another standard. ISO/IEC 14443-1 will then require the PICC to be compliant with this other standard.

24. Project editor for the revision of ISO/IEC 14443-1

Chris Stanford will confirm if Steve Brunt, UK accepts this task to replace Toshi Kato, no more available.

PROJECT EDITING OF ISO/IEC 14443-2, ISO/IEC 14443-3 AND ISO/IEC 14443-4

25. Revisions of ISO/IEC 14443 parts 2, 3 and 4 need to be edited and balloted. Volunteers are requested for these tasks.

NEXT TF2 MEETINGS

26. No meeting was planned.

Distribution: WG8 and TF2 members

Pascal ROUX