

File No. 8(55)/2012-IPHW
Ministry of Communications and Information Technology
Department of Electronics and Information Technology
(IPHW Division)

Recommendations of the Committee constituted to examine the issues regarding inclusion of Flash Memory along with EEPROM memory in NIC's SCOSTA (Smart Card Operating System for Transport Application) based Smart Card Application Guidelines

A Committee, as under, was constituted with the approval of Secretary, vide DeitY's O.M. No.8(55)/2012-IPHW dated 27th August, 2013 to examine the issues regarding inclusion of Flash Memory along with EEPROM Memory in NIC's SCOSTA based Smart Card Application Guidelines and to suggest the way forward:

- (i) Dr. Debashis Dutta, GC(R&D in Electronics), DeitY
- (ii) Prof. Rajat Moona, DG, CDAC
- (iii) DG, NIC or his representative
- (iv) DG, STQC or his representative
- (v) JS(e-Gov), DeitY or his representative
- (vi) Dr. Phalguni Gupta, IIT-Kanpur
- (vii) President, IESA
- (viii) Dr. M.J. Zarabi, Ex. CMD, SCL
- (ix) S.K. Marwaha, Director, IPHW Division, DeitY ... Member Convener

2. The Committee after detailed deliberations finds no difference in Flash based storage and EEPROM based storage for keeping Data. For keeping Operating System code in Flash, the following mechanisms are recommended for allowing inclusion of Flash Memory along with EEPROM memory in NIC's SCOSTA based Smart Card Application Guidelines:

- a) The applicant seeking certification of the smart card from NIC should submit "Flash Programming Declaration Certificate" from chip vendor declaring that the Operating System has been loaded in the Flash Memory chip at wafer level in the chip manufacturer's facility and that it has been locked at that facility in a way that it cannot be altered, modified, erased or deleted, either selectively or wholly. NIC may be asked to publish the blank "Flash Programming Declaration Certificate" to be filed by the applicant for the purpose of certification.
- b) The applicant should submit from chip vendor EAL4+(or higher) Common Criteria Certificate along with Security Target of Evaluation of the Boot loader/ Flash loader/

Start Program/ Boot Program under the Common Criteria Certificate. The Common Criteria Certificate must display BSI-CC-PP-0035-2007 / BSI-CC-PP-0084-2014 (or newer) Protection Profile.

- c) The applicant would need to provide the Chip ID Tool (hardware and software) to NIC to allow identification of the chip in the smart card submitted for certification.
- d) The applicant must also provide an undertaking from the chip vendor that it will provide, as and when required, unhindered access to concerned/ authorized officials of the Government of India to its facility(ies) to enable those officials to satisfy themselves about the chip vendor's adherence to the actions stipulated above and any other related matter having bearing on the way the Operating System loading and subsequent locking is accomplished securely.

3. As regards the way forward, the Committee recommended that for usage by user departments, NIC may bring about changes in SCOSTA Guidelines taking into account the recommendations in Para 2 above, so that Flash Memory could also be used for SCOSTA based Smart Cards. Further, STQC in association with NIC may devise a suitable mechanism to provide EAL4+ (or higher) certification/compliance of Flash based Smart Cards.
