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FAST-TRACK PROCEDURE

Information technology — Distributed application platforms and services (DAPS) — Access systems

ICS 35.100.05

This draft International Standard is submitted for JTC 1 national body vote under the "fast-track" procedure.

In accordance with Resolution 30 of the JTC 1 Berlin Plenary 1993, the proposer of this document recommends assignment of ISO/IEC JTC 1 to JTC 1.

The procedures used to develop this document are described in the ISO/IEC Directives, Part 1 - Consolidated JTC 1 Supplement.

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

ISO/IEC xxxxx was prepared by Ecma International (as ECMA-412) and was adopted, under a special “fast-track procedure”, by Joint Technical Committee ISO/IEC JTC 1, Information technology, in parallel with its approval by national bodies of ISO and IEC.

Introduction

Technology for real-time access control is widely used for many situations such as entrance gate of facilities and service access control systems. Membership and settlement services also benefit from real-time access control systems connected via networks and using database information.

Sophisticated cloud, virtualisation, database, networking technology and services and the evolution of authentication technology such as biometrics, NFC, QR codes used in distributed and modular access control systems enable previously underserved users and operators to innovate around new use cases.

Taking into account the many technologies, this International Standard specifies the reference model and common control functions. It gives direction for ongoing innovation and development of technology and system integration of distributed real-time access control system.

Information technology — Distributed Application Platforms and Services (DAPS) — Access Systems

1 Scope

This International Standard specifies:

1) an ID triggered modular access system, the functions of the modules and the messages they exchange, and the sequence of messages, i.e. transitions of the transaction;

2) the system responsibility from receiving an access request until sending the result. i.e. a complete transaction;

3) the responsibilities of the modules, including time stamping and responding to the requests they received; and

4) the sequence and semantics of the messages and their elements.

2 Conformance

Conformant Access Systems progress transactions by evaluating the applicable rules. Conformant modules implement the requests on their interfaces, the corresponding responses and time stamping as specified herein.

3 Normative references

None.

4 Terms, definitions and acronyms

For the purposes of this document, the following terms, definitions and acronyms apply.

4.1
ID
Identifier

4.2
RED
Rule Evaluation and Dispatching

4.3
transaction
request for access

5 Model

Figure 1 illustrates the Access System structure.

The Access System has 5 modules "Access-point, Policy, Processing, RED and Storage" and 4 interfaces "Access-interface, Policy-interface, Processing-interface and Storage-interface".

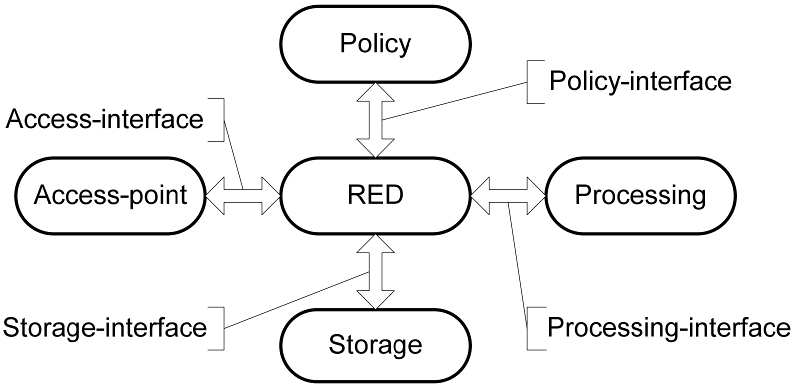

Figure 1 — Access System

The Access System progresses a transaction by exchanging messages between modules and decides the final result (grant or deny). A transaction starts when an Access-point module obtains Access_request and completes when the RED module sends Final_Result_Notification. Each module shall have a time stamping function. The message exchanging and the time stamping function are managed by the RED module according to rules which are set by the Policy module.

6 Transaction

Transaction ID identifies a transaction. Transaction ID shall consist of Access ID, Access-point ID and time at which the Access_request is obtained. Access ID is included in Access_request.

Figure 2 specifies the state machine of a transaction.

A transaction is generated at the time of Access_request acceptance by an Access-point module. After that the transaction changes to on-going state by sending a Transaction_start_request including Transaction ID from the Access-point module to the RED module.

At the on-going state, the RED module evaluates rules until final result is obtained. According to the result of the evaluation, the RED module sends a request message to Processing or Storage module and receives a response message.

When the RED module obtains the final result, it sends Final_Result_Notification and the transaction is completed.

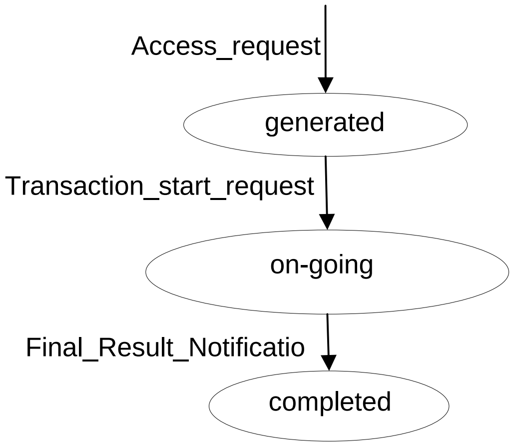

Figure 2 — Transaction State Machine

7 Time stamping function

The purpose of Time stamping function is to measure the duration of transaction and request processing.

The Access-point modules shall set the Access_ID_obtained_time in the Transaction_start_request message. For the other modules, time stamping shall be activated and deactivated through time stamping rules. Upon evaluating of the time stamping rules, the RED module shall set the TimeStampingFlag value in the requests to TRUE or FALSE according to the evaluation. Depending on the TimeStampingFlag value in the requests, modules shall either time stamp the ReceivedTime and SendingTime or exclude those elements in the corresponding response.

The RED module shall send the time stamping measurements by responding to the Time_stamp_Notification.

The RED module is able to measure following time.

1) transaction processing time

2) request processing time.

When the Time stamping function of each module is activated, the RED module shall measure the following time.

3) module processing time.

The RED module shall measure the transaction processing time by calculating the difference between the time that the RED module received Transaction_start_request and the time that Final_Result_Notification is sent.

The RED module shall measure the request processing time by recording the sending time of the request and the received time of the response, and calculating the difference between them.

Processing_response, Store_response and Retrieve_response have the information about the received time of the corresponding request and the sending time of the response itself as long as the Time stamping function is activated. By using them, the RED module is able to measure the module processing time. For example, the module processing time of the Processing module for one request from the RED module is measured by the difference between RecievedTime and SendingTime in the corresponding Processing_response.

Annex C illustrates the usage of time stamping.

