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Information technology — Open Systems Interconnection — Remote Database Access —

Part 3:
SQL specialization Protocol Implementation Conformance Statement (PICS) proforma

Technologies de l'information — Interconnexion de systèmes ouverts (OSI) — Accès à une base de données distante —

Partie 3: Proforme d'établissement de conformité pour la mise en œuvre du protocole (PICS) SQL

Reference number
ISO/IEC 9579-3:1996(E)

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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. 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.

International Standard ISO/IEC 9579-3 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 21, *Open Systems interconnection, data management and open distributed processing*.

ISO/IEC 9579 consists of the following parts, under the general title *Information technology — Open Systems Interconnection — Remote Database Access*:

— *Part 1: Generic Model, Service and Protocol*

— *Part 2: SQL specialization*

— *Part 3: SQL specialization Protocol Implementation Conformance Statement (PICS) proforma*

Annexes A to E form an integral part of this part of ISO/IEC 9579.

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Introduction

The aim of Open Systems Interconnection is to allow, with a minimum of technical agreement outside the interconnection standards, the interconnection of computer systems:

a) from different manufacturers,
b) under different management,
c) of different levels of complexity,
d) of different technologies.

Remote Database Access (RDA) is concerned with exchanges of database language statements and data between a client application and a database server to enable an application to read and update data in a remote database.

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Information technology — Open Systems Interconnection — Remote Database Access —

Part 3:
SQL specialization Protocol Implementation Conformance Statement (PICS) proforma

1 Scope

This part of ISO/IEC 9579 defines a Protocol Implementation Conformance Statement (PICS) proforma for the detailed expression of the conformance requirements of ISO/IEC 9579-2, as amended by Technical Corrigendum 1. This PICS proforma is in compliance with the relevant requirements for a PICS proforma given in ISO/IEC 9646-2. Detail on the use of this proforma is provided in this part of ISO/IEC 9579. Implementors of implementations claiming conformance to ISO/IEC 9579-2 shall complete the proforma as part of the conformance requirements. The level of detail required in the proforma exceeds that of the protocol specification by requiring details to uniquely identify the implementation and the supplier.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC 9579. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO/IEC 9579 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO/IEC 9579-1:1993, *Information technology — Open Systems Interconnection — Remote Database Access — Part 1: Generic Model, Service, and Protocol.*

ISO/IEC 9579-1:1993/Cor.1:1995, *Information technology — Open Systems Interconnection — Remote Database Access — Part 1: Generic Model, Service, and Protocol — Technical Corrigendum 1.*

ISO/IEC 9579-2:1993, *Information technology — Open Systems Interconnection — Remote Database Access — Part 2: SQL specialization.*

ISO/IEC 9579-2:1993/Cor.1:1995, *Information technology — Open Systems Interconnection — Remote Database Access — Part 2: SQL specialization — Technical Corrigendum 1.*

ISO/IEC 9646-1:1994, *Information technology — Open Systems Interconnection — Conformance testing methodology and framework — Part 1: General concepts.*

ISO/IEC 9646-2:1994, *Information technology — Open Systems Interconnection — Conformance testing methodology and framework — Part 2: Abstract Test Suite specification.*

ISO/IEC 9646-7:1995, *Information technology — Open Systems Interconnection — Conformance testing methodology and framework — Part 7: Implementation Conformance Statements.*

3 Definitions

Terms used in this part of ISO/IEC 9579 are defined in ISO/IEC 9579-2, in ISO/IEC 9646-1, and in clause 7 of this part of ISO/IEC 9579, except as indicated below.

3.1 Conformance Testing Definitions

No additional conformance testing definitions apply to this part of ISO/IEC 9579.

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3.2 RDA SQL PICS Definitions

The following definitions apply to this part of ISO/IEC 9579.

3.2.1 Initiator

The RDA service-provider that initiates an underlying service request.

3.2.2 Responder

The RDA service-provider that provides a response to a service request.

4 Abbreviations

Abbreviations used in this part of ISO/IEC 9579 are defined in ISO/IEC 9579-2, in ISO/IEC 9646-1, and in clause 7 of this part of ISO/IEC 9579, except for the following:

Basic RDA SQL Basic application-context
TP RDA SQL TP application-context
FU Functional unit

5 Conformance

A PICS that conforms to this part of ISO/IEC 9579 shall:

a) describe an implementation that conforms to ISO/IEC 9579-2.
b) be a conforming PICS that has been completed in accordance with the instructions for completion given in clauses 7 and 8.
c) include the information necessary to uniquely identify both the supplier and the implementation.

6 Description of the proforma

The proforma for this PICS is defined in Annexes A, B, C, D, and E. Annex A identifies the implementor and defines global conformance requirements of ISO/IEC 9579-2. The remaining Annexes define specific conformance requirements as follows:

Annex B: Basic application-context, client role
Annex C: Basic application-context, server role
Annex D: TP application-context, client role
Annex E: TP application-context, server role

Annex A is divided into the following clauses:

A.1 Identification of the PICS, containing the Date of Statement for the PICS and the Supplier and Implementation details that uniquely identify the supplier of the PICS and the implementation.

A.2 Conformance claim, including information on which protocol version numbers, amendments and technical corrigenda have been included in the implementation.

A.3 Support of functional units, limits, and mechanisms. This section identifies the functional units supported by the implementation depending on the possible modes of operation. It also includes a statement of which roles and mechanisms have been implemented.

A.4 General guidance on completing Annexes B to E.

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Annexes B, C, D, and E comprise the major portion of the PICS proforma. Each Annex defines the conformance requirements for a particular combination of application-context (Basic or TP) and role (client or server). This information defines the APDUs and the APDU fields that are implemented, organized by the relevant functional units, and includes a statement of the values supported and a reference to further detail for many of the fields.

NOTE — In ISO/IEC 9579-2, result and error responses to a request APDU are integrated in the same type of APDU. The PICS proforma considers them in separate tables with distinct titles. For example, the response to an R-Terminate-RI APDU is either R-Terminate-RC (Normal Result) or R-Terminate-RC (Error Result).

7 Notations used in the proforma

In order to reduce the size of the tables in the PICS proforma, certain notations have been introduced. These allow the use of a multi-column layout with the following headings: Number, Item, Reference, Status, Support, Values, and Comment.

NOTE — Not all columns appear in all tables.

7.1 Columns

7.1.1 Number

This column contains a serial number that increases monotonically down the table to enable reference to the rows of the table (refer to clause 9).

7.1.2 Item

This column identifies the items (typically APDUs or APDU fields) addressed in the table.

7.1.3 Reference

This column contains a reference to a clause in ISO/IEC 9579-2 where the appropriate item is specified.

7.1.4 Status

This column indicates the level of support required for conformance to ISO/IEC 9579-2 as detailed below. (Refer to clause A.4 for guidance on the meaning of the term "support".)

m *mandatory*: The implementation shall support the item.

d *default*: The implementation shall support the item. A default value is defined in the ASN.1 specification of ISO/IEC 9579-2, and for this special value a sender may omit this field when this value is intended. A receiver shall interpret the omission of an explicit value for this field as implying this default value.

o *optional*: The implementation may decide either to support or not to support the item. If the item is a received field, then an implementation that does not support this item must implement the abstract syntax of the field. A decision to support or not to support one item may affect the optionality of other items.

o.n *optional*: At least one of the items having status o.n shall be implemented (where n is a positive integer).

NOTE — Where there is only one instance of o.n for some value of n (reflecting an underlying ASN.1 CHOICE of one), the semantic is equivalent to that of "m".

c.n *conditionally supported*: Support for the item is further defined by a condition c.n (where n is a positive integer).

n/a *not applicable*: The item is not defined by ISO/IEC 9579-2 in a given application-context or under a given condition.

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NOTES
1. Values for fields received on a response APDU are passed by the RDA protocol machine to the RDA client. The RDA client does not necessarily pass these values to the SQL-client.
2. c.n and o.n labels used in Annexes A-E are listed in 7.3 below.

7.1.5 Support

The Support column shall be completed *by the supplier or implementor* to indicate the level of implementation of each feature. Where a cell is preprinted with "n/a" (not applicable), no entry shall be inserted at that position. Elsewhere, entries shall be as defined in 7.2.

7.1.6 Values

This column refines the level of support provided. It is divided into two subcolumns, viz., **Values Allowed**, which indicates any limitations on the permitted values specified in ISO/IEC 9579-2, and **Values Supported**, which shall be completed *by the supplier or the implementor* to indicate any restriction on the values supported by the implementation of each feature. Where this column is preprinted with "–", representing a non-applicable entry, no entry shall be inserted at that position. A blank entry indicates that there are no restrictions. Elsewhere, entries shall be as defined in 7.8.

The following notation is used to express the permitted or implemented values of fields in the Values column:

- Enumerated types: The integer representation of the values of this particular enumerated type are utilized. Several values may be listed, separated by commas (e.g., 1, 2, 5, 8), or a range of values is indicated by giving the lower and upper limits of the range separated by a dash (e.g., 1-4 is the same as 1, 2, 3, 4).
- Boolean types: The values TRUE and FALSE are used to indicate that the function defined by the corresponding Boolean field is supported (TRUE) or is not supported (FALSE).

7.1.7 Comment

This column may be preprinted with an explanatory comment, or left blank for the implementor to add a comment on the responses given, or other information. If the implementor has no comment to add, then a "–" or "n/a" should be entered.

7.2 Column entries

The PICS proforma has been designed such that the only entries permitted in the Support and Values Supported columns are:

Y *Yes:* The item is supported. If "Y" is entered in a PICS table, the value of that entry when referenced in Boolean expressions is TRUE.

N *No:* The item is not supported. If "N" is entered in a PICS table, the value of that entry when referenced in Boolean expressions is FALSE.

Err *Error:* The occurrence of the item is treated as a protocol error. If "Err" is entered in a PICS table, the value of that entry when referenced in Boolean expressions is "FALSE". "Err" shall only be used within certain tables, viz., within RI-APDU tables in the case of the server role (Annexes C and E), and within RC-APDU tables in the case of the client role (Annexes B and D).

"Err" has the same static conformance semantics as "N". If an item is marked as "m" or "d" in the Status column, then only "Y" may be checked in the Support column for the implementation to be conformant.

The Values column requires the specification of the range of values implemented for the corresponding item, for each role, where relevant. The range of values implemented may be specified in terms of the values of the ASN.1 data type, or in terms of the encoded length.

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7.3 Status column codes

7.3.1 Condition codes

Table 1 (Part 1) — Condition codes

Label	Condition	Table references
c.1	If at least one of the Immediate Execution DBL or the Stored Execution DBL functional units is supported then "m" else "o".	A-9
c.2	If an RDA client is supported then "m" else "n/a"	A-11, A-13
c.3	If an RDA server is supported then "m" else "n/a"	A-11, A-13
c.4	If at least one of the Cancel and Status functional units is supported then "m" else "o".	B-2
c.5	If userAuthenticationData is supported then "o.5" else "n/a".	B-2
c.6	If an R-Initialize-RI controlServiceDataRequested value of TRUE is supported, then "m" else "n/a".	B-5, B-23, B-25, B-29, C-23, C-25, C-27, C-29, D-5, D-23, D-25, D-27, D-29, E-23, E-25, E-27, E-29
c.7	If an R-Initialize-RI controlServiceDataRequested value of TRUE is supported, then "d" else "n/a".	B-5, D-5
c.8	If controlAuthenticationData is supported, then "m" else "n/a".	B-5, C-23, C-27, D-5, E-23, E-27
c.9	If the R-Cancel-RI controlledDialogue field is supported, then "m" else "n/a".	B-23, C-23, D-23, E-23
c.10	If controlAuthenticationData is supported, then "o.7" else "n/a".	B-23
c.11	If the R-Status-RI controlledDialogue field is supported, then "m" else "n/a".	B-27, C-27, D-27, E-27
c.12	If controlAuthenticationData is supported, then "o.8" else "n/a".	B-27
c.13	If listOfOperationID is supported, then "m" else "n/a".	B-27, D-27
c.14	If sQLAccessControlData is supported, then "o.9" else "n/a".	B-31
c.15	If charSet is supported within the R-Open-RI APDU, then "m" else "n/a".	B-33, D-33
c.16	If the Cancel functional unit is supported, or if a controlServiceDataRequested value of TRUE is supported, then "m" else "n/a".	B-35, B-38, B-42, B-48, B-51, B-54, C-35, C-38, C-42, C-48, C-51, C-54, D-35, D-38, D-42, D-48, D-51, D-54, E-35, E-38, E-42, E-48, E-51, E-54
c.17	If listOfDataResourceHandle is supported, then "m" else "n/a".	B-36, D-36
c.18	If sQLDBLResultSpecification is supported, then "m" else "n/a".	B-40, B-46, C-47, D-40, D-46, E-47
c.19	If multipleArgument is supported, then "m" else "n/a".	B-40, B-49, C-40, C-49, D-40, D-49, E-40, E-49
c.20	If Entry SQL level of ISO/IEC 9075:1992 is supported, then "m" else "n/a".	B-41, B-47, B-50, C-41, C-50, D-50, E-41, E-50

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Table 1 (Part 2) — Condition codes

Label	Condition	Table references
c.21	If a level of ISO/IEC 9075:1987 or ISO/IEC 9075:1989 is supported, then "m" else "n/a".	B-41, B-47, B-50, C-41, C-50
c.22	If the Transaction Management functional unit is supported, then "m" else "o".	B-42, B-51, C-42, C-51
c.23	If listOfCommandHandle is supported, then "m" else "n/a".	B-52
c.24	If userAuthenticationData is supported, then "m" else "n/a".	C-2, E-2
c.25	If an R-Initialize-RC controlServicesAllowed value of TRUE is supported, then "m" else "n/a".	C-5, E-5
c.26	If controlAuthenticationData is supported, then "o.11" else "n/a".	C-5
c.27	If sQLAccessControlData is supported, then "m" else "n/a".	C-31, E-31
c.28	If sQLDBLException and Entry SQL level of ISO/IEC 9075:1992 are supported, then "m" else "n/a".	C-47, E-47
c.29	If sQLDBLException and a level of ISO/IEC 9075:1987 or ISO/IEC 9075:1989 are supported, then "m" else "n/a".	C-47
c.30	If sQLDBLException is supported, then "m" else "n/a".	C-47, E-41, E-47
c.31	If userAuthenticationData is supported then "o.13" else "n/a".	D-2
c.32	If at least one of the Cancel and Status functional units is supported then "m" else "n/a".	D-2
c.33	If controlAuthenticationData is supported then "o.15" else "n/a".	D-23
c.34	If controlAuthenticationData is supported then "o.16" else "n/a".	D-27
c.35	If sQLAccessControlData is supported, then "o.17" else "n/a".	D-31
c.36	If sQLConformanceLevel is not supported on R-Initialize-RI, then "m" else "o".	D-31
c.37	If a level of ISO/IEC 9075:1987 or ISO/IEC 9075:1989 is supported, then "m" else "o".	D-50, E-41, E-50
c.38	If controlAuthenticationData is supported, then "o.19" else "n/a".	E-5
c.39	If listOfResultValues is supported, then "m" else "n/a".	E-41
c.40	If sQLDBLException and a level of ISO/IEC 9075:1987 or ISO/IEC 9075:1989 are supported, then "m" else "o".	E-47

7.3.2 Option codes

Table 2 — Option codes

Label	Referencing condition (if applicable)	Table references
o.1		A-8
o.2		A-9
o.3		A-12
o.4		B-2
o.5	c.5	B-2
o.6		B-2, B-31
o.7	c.10	B-23
o.8	c.12	B-27
o.9	c.14	B-31
o.10		C-2
o.11	c.26	C-5
o.12		D-2
o.13	c.31	D-2
o.14		D-2, D-31
o.15	c.33	D-23
o.16	c.34	D-27
o.17	c.35	D-31
o.18		E-2
o.19	c.38	E-5

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8 Completion of the PICS

The implementor shall complete Annex A and at least one of Annexes B, C, D, E.

The implementor shall complete all blank entries in the Support and Values Supported columns. In addition, other specifically identified information shall be provided by the implementor where requested (the supplier will then usually fill in the blank columns).

All cells containing the symbol "n/a" shall be left as in the proforma.

No changes shall be made to the proforma except the details required for completion. Where the level of detail required exceeds the space available for responses, additional information may be included in appendices to the PICS.

9 PICS numbers

Each row within a clause of the PICS proforma that requires implementation detail to be entered is numbered in the left-most cell of the row. This numbering is included as a means of uniquely identifying all possible implementation detail within the PICS proforma. The need for such unique referencing has been identified by the testing bodies.

Responses shall be referenced by specifying the following sequence:

a) the clause number
b) a solidus character ("/")
c) the table number
d) a solidus character ("/")
e) the number of the row in which the response appears

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Annex A

(normative)

Remote Database Access — SQL Specialization

Protocol Implementation Conformance Statement (PICS) Proforma

Global Conformance Requirements

A.1 Identification of the implementation

A.1.1 Date of Statement

This subclause records the date on which the PICS was filled in.

Table A-1 — Date of Statement

1	Date of Statement (yy-mm-dd)	

A.1.2 Supplier and implementation details

This subclause allows for the specification of the information necessary to uniquely identify the implementation and the systems in which it may reside. This may include details of:

a) supplier, implementor name, operating system, suitable hardware;
b) system supplier and/or client of the test laboratory that is to test the implementation;
c) information on whom to contact if there are queries concerning the content of the PICS.

A.1.2.1 Supplier details

This subclause identifies the supplier of this PICS. At least items 1 and 3 shall be filled in.

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Table A-2 — Supplier details

1	Organization	
2	Contact Name(s)	
3	Address	
4	Telephone	
5	Telex	
6	Fax	
7	E-mail	
8	Other information	

A.1.2.2 Implementation details

This subclause specifies the information necessary to uniquely identify the implementation and the systems in which it may reside.

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Table A-3 — Implementation details

1	Implementation name	
2	Version	
3	Hardware name	
4	Hardware version	
5	Operating system name	
6	Operating system version	
7	Special configuration requirements	
8	Other information	

A.2 Claimed conformance to standards

A.2.1 ISO/IEC 9579-2

A.2.1.1 Version number(s)

A PICS allows a supplier to make a claim about conformance to a particular version of a protocol. This PICS relates to version 1 of the Remote Database Access — SQL Specialization protocol as specified by ISO/IEC 9579-2, which is a specialization of ISO/IEC 9579-1.

However, an implementation may conform to more than one protocol version. Other protocol versions supported by the implementation but not addressed by this PICS are identified in Table A-4. If no other version is supported by the implementation, the answer shall be "NONE".

Table A-4 — Other version numbers supported

1	What other version(s) of the RDA SQL protocol does your implementation support? (List version numbers.)	

A.2.1.2 Global conformance claim

Table A-5 — Global conformance claim

1	Are all mandatory features of at least one of the conformance classes of ISO/IEC 9579-2 implemented? (Answer "YES" or "NO".)	

A "NO" answer indicates that the implementation does not conform to ISO/IEC 9579-2.

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A.2.2 ISO/IEC 9579-2 amendments

Specify the amendment number(s) implemented for each of the following standards. If no RDA SQL amendment is supported by the implementation, the answer shall be "NONE".

Table A-6 — Amendment numbers supported

	Standard	Amendment number(s)
1	ISO/IEC 9579-2	

A.2.3 ISO/IEC 9579-2 technical corrigenda

Specify the technical corrigendum number(s) implemented for each of the following standards. If no RDA SQL technical corrigenda are supported by the implementation, the answer shall be "NONE".

Table A-7 — Technical corrigendum numbers supported

	Standard	Technical corrigendum number(s)
1	ISO/IEC 9579-2	

NOTE — Refer to clauses 7 and 8 for guidance on completing Tables A-8 through A-13.

A.2.4 Application-contexts and roles supported

For which of the following four combinations of application-context and role defined by ISO/IEC 9579-2 are all mandatory features supported in your implementation? (Answer "Y" or "N".)

Table A-8 — RDA SQL application-contexts and roles supported

	Application-context	Role	Status	Support	Comment
1	Basic	Client	o.1		
2	Basic	Server	o.1		
3	TP	Client	o.1		
4	TP	Server	o.1		

NOTE — The implementor shall complete at least one of Annexes B, C, D, E, corresponding to "Y" answers in rows 1, 2, 3, 4 in Table A-8.

A.3 Functional units, limits, and protocol mechanisms

The tables to be found in Annexes B, C, D, and E may be used to report any practical limits the implementation may have.

A.3.1 Support of functional units

Conformance to one of the application-contexts defined in ISO/IEC 9579-2 implies the support of a specific set of functional units. Table A-9 provides for the identification of the functional units supported by an implementation.

Does your implementation support at least the mandatory features of the following functional units?

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Table A-9 — Support of functional units

	Functional Unit	Status		Support		Comment
		Basic	TP	Basic	TP	
1	RDA Dialogue Initialization	m	m			
2	RDA Dialogue Termination	m	n/a		n/a	Handled by TP in the RDA SQL TP application-context
3	RDA Transaction Management	o	n/a		n/a	Handled by TP in the RDA SQL TP application-context
4	Cancel	o.3	o.3			
5	Status	o.3	o.3			
6	Resource Handling	c.1	c.1			
7	Immediate Execution DBL	o.3	o.3			
8	Stored Execution DBL	o.3	o.3			
9	TP Commit	n/a	m	n/a		

A.3.2 Support of control services to other RDA dialogues

If either the Cancel or the Status functional unit is supported, does your implementation support control services relevant to RDA dialogues other than the RDA dialogue on which the Cancel and/or Status functional units have been negotiated?

Table A-10 — Support of control services

	Control services	Status	Support	Comment
1	Control services relevant to other RDA dialogues	o		

A.3.3 Protocol mechanisms implemented

A.3.3.1 Association establishment

Indicate whether your implementation supports application-association establishment as initiator and/or responder.

Table A-11 — Association establishment

	Role	Status		Support		Comment
		Basic	TP	Basic	TP	
1	Initiator	c.2	n/a		n/a	Handled by TP in the RDA SQL TP application-context
2	Responder	c.3	n/a		n/a	Handled by TP in the RDA SQL TP application-context

A.3.3.2 Association release

Indicate whether your implementation supports application-association release as initiator and/or responder.

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Table A-12 — Association release

	Role	Status		Support		Comment
		Basic	TP	Basic	TP	
1	Initiator	o.4	n/a		n/a	Handled by TP in the RDA SQL TP application-context
2	Responder	o.4	n/a		n/a	Handled by TP in the RDA SQL TP application-context

A.3.3.3 RDA dialogue initialization

In which role(s) does your implementation support RDA dialogue initialization?

Table A-13 — RDA dialogue initialization

	Role	Status		Support		Comment
		Basic	TP	Basic	TP	
1	RDA client	c.2	c.2			
2	RDA server	c.3	c.3			

A.4 General guidance on Annexes B to E

The purpose of Annexes B to E is to allow a supplier of an implementation claiming conformance to ISO/IEC 9579-2 to describe the implementation. Annex B allows an implementer to describe the implementation of the client role in the RDA SQL Basic application-context. Annex C allows an implementer to describe the implementation of the server role in the RDA SQL Basic application-context. Annex D allows an implementer to describe the implementation of the client role in the RDA SQL TP application-context. Annex E allows an implementer to describe the implementation of the server role in the RDA SQL TP application-context.

ISO/IEC 9646-7:1995 defines the notion of support of a protocol element. In the case of RDA, that definition implies the following:

- Support for an RI-APDU by a client means that the client is capable of constructing and transmitting the RI-APDU to a server.
- Support for an RI-APDU by a server means that the server is capable of receiving and parsing the RI-APDU.
- Support for an RC-APDU by a client means that the client is capable of receiving and parsing the RC-APDU.
- Support for an RC-APDU by a server means that the server is capable of constructing and transmitting the RC-APDU to a client.
- Support for a field of an APDU by a sender means that the sender is capable of constructing and transmitting the field of the APDU.
- Support for a field of an APDU by a receiver means that the receiver is capable of processing the field of the APDU.

In the clauses of Annexes B to E, detail the level of support for the RDA SQL protocol and its APDU fields. State which fields are, and which are not, supported in each APDU.

If an APDU field is supported, then its range of values shall be specified. Fields that are not supported shall be so marked.

NOTE — In order to keep the protocol tables compact, some forward references have been introduced to clauses that expand upon the detail of field support.

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Annex B

(normative)

Remote Database Access — SQL Specialization

Protocol Implementation Conformance Statement (PICS) Proforma

Specific Conformance Requirements

for

Client Role in Basic Application-Context

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NOTES
1. This Annex should only be completed after completing Annex A.
2. Refer to clause 7 for an explanation of notation used in this Annex.
3. Refer to clauses 8 and A.4 for guidance on completing this Annex.

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B.1 Dialogue Initialization functional unit

B.1.1 APDUs supported

Table B-1 — APDUs supported in Dialogue Initialization FU

	Dialogue Initialization FU APDU	Ref	Status	Support	Comment
1	R-Initialize-RI	4.2.2	m		
2	R-Initialize-RC (Normal Result)	4.2.2	m		
3	R-Initialize-RC (Error Result)	4.2.2	m		
4	R-Synchronize-RI	4.2.2	m		

B.1.2 R-Initialize APDUs

Table B-2 — R-Initialize-RI APDU

	R-Initialize-RI Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.3.1.1	m				
2	dialogueIDSuffix	4.1.3.1.1	m		–	–	
3	ostring	4.1.3.1.1	o.4				
4	identityOfUser	4.1.3.1.1	m		–	–	
5	userAuthenticationData	4.1.3.1.1	c.4		–	–	
6	cstring	4.1.3.1.1	c.5				
7	ostring	4.1.3.1.1	c.5				
8	bstring	4.1.3.1.1	c.5				
9	controlServiceDataRequested	4.1.3.1.1	d		TRUE/FALSE		
10	functionalUnitsRequested	4.1.3.1.1	m		See Table B-3	See Table B-3	
11	sQLConformanceLevelDefault	4.1.3.1.1	o.6		See Table B-4	See Table B-4	
12	userData	4.1.3.1.1	o				

Table B-3 — Functional Units Requested

	functionalUnitsRequested Values		Comment
	Allowed	Supported	
1	termination		
2	transaction		
3	cancel		
4	status		
5	resource		
6	immediate-DBL		
7	stored-DBL		

Table B-4 — SQL Conformance Level Default

	sQLConformanceLevelDefault Values		Comment
	Allowed	Supported	
1	iso (1) standard (0) 9075 edition1987 (0)		
2	iso (1) standard (0) 9075 edition1989 (1) IntegrityNo (0) Low (0)		
3	iso (1) standard (0) 9075 edition1989 (1) IntegrityNo (0) Intermediate (1)		
4	iso (1) standard (0) 9075 edition1989 (1) IntegrityYes (1) Low (0)		
5	iso (1) standard (0) 9075 edition1989 (1) IntegrityYes (1) Intermediate (1)		
6	iso (1) standard (0) 9075 edition1992 (2) Low (0)		

Table B-5 — R-Initialize-RC (Normal Result) APDU

	R-Initialize-RC (Normal Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.3.1.1	m				
2	controlServiceData	4.1.3.1.1	c.5		–	–	
3	controlServicesAllowed	4.1.3.1.1	c.6		TRUE/FALSE		
4	controlAuthenticationData	4.1.3.1.1	c.5		–	–	
5	cstring	4.1.3.1.1	c.7				
6	ostring	4.1.3.1.1	c.7				
7	bstring	4.1.3.1.1	c.7				
8	functionalUnitsAllowed	4.1.3.1.1	m		See Table B-6	See Table B-6	
9	userData	4.1.3.1.1	o				

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Table B-6 — Functional Units Allowed

	functionalUnitsAllowed Values		Comment
	Allowed	Supported	
1	termination		
2	transaction		
3	cancel		
4	status		
5	resource		
6	immediate-DBL		
7	stored-DBL		

Table B-7 — R-Initialize-RC (Error Result) APDU

	R-Initialize-RC (Error Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.3.1.1	m				
2	accessControlViolation	4.1.3.1.1	m		–	–	
3	duplicateDialogueID	4.1.3.1.1	m		–	–	
4	invalidSequence	4.1.3.1.1	m		–	–	
5	diagnosticInformation	4.1.3.1.1	m		1-7		
6	operationAborted	4.1.3.1.1	m		–	–	
7	errorType	4.1.3.1.1	d		0-1		
8	diagnosticInformation	4.1.3.1.1	m				
9	userAuthenticationFailure	4.1.3.1.1	m		–	–	

B.1.3 R-Synchronize APDU

Table B-8 — R-Synchronize-RI APDU

	R-Synchronize-RI Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	–	4.2.2	m		–	–	

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B.2 Dialogue Termination functional unit

B.2.1 APDUs supported

Table B-9 — APDUs supported in Dialogue Termination FU

	Dialogue Termination FU APDU	Ref	Status	Support	Comment
1	R-Terminate-RI	4.2.2	m		
2	R-Terminate-RC (Normal Result)	4.2.2	m		
3	R-Terminate-RC (Error Result)	4.2.2	m		

B.2.2 R-Terminate APDUs

Table B-10 — R-Terminate-RI APDU

	R-Terminate-RI Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.3.2.1	m				

Table B-11 — R-Terminate-RC (Normal Result) APDU

	R-Terminate-RC (Normal Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.3.2.1	m				

Table B-12 — R-Terminate-RC (Error Result) APDU

	R-Terminate-RC (Error Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.3.2.1	m				
2	duplicateOperationID	4.1.3.2.1	m		–	–	
3	invalidSequence	4.1.3.2.1	m		–	–	
4	diagnosticInformation	4.1.3.2.1	m		1-7		
5	operationAborted	4.1.3.2.1	m		–	–	
6	errorType	4.1.3.2.1	d		0-1		
7	diagnosticInformation	4.1.3.2.1	m				
8	serviceNotNegotiated	4.1.3.2.1	m		–	–	

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B.3 RDA Transaction Management functional unit

B.3.1 APDUs supported

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Table B-13 — APDUs supported in Transaction Management FU

	Transaction Management FU APDU	Ref	Status	Support	Comment
1	R-BeginTransaction-RI	4.2.2	m		
2	R-BeginTransaction-RC (Error Result)	4.2.2	m		
3	R-Commit-RI	4.2.2	m		
4	R-Commit-RC (Normal Result)	4.2.2	m		
5	R-Commit-RC (Error Result)	4.2.2	m		
6	R-Rollback-RI	4.2.2	m		
7	R-Rollback-RC (Normal Result)	4.2.2	m		
8	R-Rollback-RC (Error Result)	4.2.2	m		

B.3.2 R-BeginTransaction APDUs

Table B-14 — R-BeginTransaction-RI APDU

	R-BeginTransaction-RI Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.4.1.1	m				

Table B-15 — R-BeginTransaction-RC (Error Result) APDU

	R-BeginTransaction-RC (Error Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.4.1.1	m				
2	duplicateOperationID	4.1.4.1.1	m		–	–	
3	invalidSequence	4.1.4.1.1	m		–	–	
4	diagnosticInformation	4.1.4.1.1	m		1-7		
5	operationAborted	4.1.4.1.1	m		–	–	
6	errorType	4.1.4.1.1	d		0-1		
7	diagnosticInformation	4.1.4.1.1	m				
8	serviceNotNegotiated	4.1.4.1.1	m		–	–	

B.3.3 R-Commit APDUs

Table B-16 — R-Commit-RI APDU

R-Commit-RI Field Name		Ref	Status	Support	Values Allowed	Values Supported	Comment
1	operationID	4.1.4.1.2	m				

Table B-17 — R-Commit-RC (Normal Result) APDU

R-Commit-RC (Normal Result) Field Name		Ref	Status	Support	Values Allowed	Values Supported	Comment
1	operationID	4.1.4.1.2	m				
2	transactionResult	4.1.4.1.2	m		0-1		

Table B-18 — R-Commit-RC (Error Result) APDU

R-Commit-RC (Error Result) Field Name		Ref	Status	Support	Values Allowed	Values Supported	Comment
1	operationID	4.1.4.1.2	m				
2	duplicateOperationID	4.1.4.1.2	m		–	–	
3	invalidSequence	4.1.4.1.2	m		–	–	
4	diagnosticInformation	4.1.4.1.2	m		1-7		

B.3.4 R-Rollback APDUs

Table B-19 — R-Rollback-RI APDU

R-Rollback-RI Field Name		Ref	Status	Support	Values Allowed	Values Supported	Comment
1	operationID	4.1.4.1.3	m				

Table B-20 — R-Rollback-RC (Normal Result) APDU

R-Rollback-RC (Normal Result) Field Name		Ref	Status	Support	Values Allowed	Values Supported	Comment
1	operationID	4.1.4.1.3	m				

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Table B-21 — R-Rollback-RC (Error Result) APDU

	R-Rollback-RC (Error Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.4.1.2	m				
2	duplicateOperationID	4.1.4.1.2	m		–	–	
3	invalidSequence	4.1.4.1.2	m		–	–	
4	diagnosticInformation	4.1.4.1.2	m		1-7		

B.4 Cancel functional unit

B.4.1 APDUs supported

Table B-22 — APDUs supported in Cancel FU

	Cancel FU APDU	Ref	Status	Support	Comment
1	R-Cancel-RI	4.2.2	m		
2	R-Cancel-RC (Normal Result)	4.2.2	m		
3	R-Cancel-RC (Error Result)	4.2.2	m		

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B.4.2 R-Cancel APDUs

Table B-23 — R-Cancel-RI APDU

R-Cancel-RI Field Name		Ref	Status	Support	Values Allowed	Values Supported	Comment
1	operationID	4.1.5.1.1	m				
2	controlledDialogue	4.1.5.1.1	c.5		–	–	
3	dialogueIDClientInvocation	4.1.5.1.1	c.8		–	–	
4	apTitle	4.1.5.1.1	c.8				
5	aeQualifier	4.1.5.1.1	c.8				
6	apInvocationID	4.1.5.1.1	c.8				
7	aeInvocationID	4.1.5.1.1	c.8				
8	dialogueIDSuffix	4.1.5.1.1	c.8				
9	ostring	4.1.5.1.1	m				
10	controlAuthenticationData	4.1.5.1.1	c.8		–	–	
11	cstring	4.1.5.1.1	c.10				
12	ostring	4.1.5.1.1	c.10				
13	bstring	4.1.5.1.1	c.10				
14	listOfOperationID	4.1.5.1.1	m				
15	operationID	4.1.5.1.1	m				

Table B-24 — R-Cancel-RC (Normal Result) APDU

R-Cancel-RC (Normal Result) Field Name		Ref	Status	Support	Values Allowed	Values Supported	Comment
1	operationID	4.1.5.1.1	m				

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Table B-25 — R-Cancel-RC (Error Result) APDU

	R-Cancel-RC (Error Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.5.1.1	m				
2	controlAuthenticationFailure	4.1.5.1.1	c.5		–	–	
3	controlServicesNotAllowed	4.1.5.1.1	m				
4	dialogueIDUnknown	4.1.5.1.1	c.5				
5	duplicateOperationID	4.1.5.1.1	m		–	–	
6	invalidSequence	4.1.5.1.1	m		–	–	
7	diagnosticInformation	4.1.5.1.1	m		1-7		
8	operationAborted	4.1.5.1.1	m		–	–	
9	errorType	4.1.5.1.1	d		0-1		
10	diagnosticInformation	4.1.5.1.1	m				
11	serviceNotNegotiated	4.1.5.1.1	m		–	–	

B.5 Status functional unit

B.5.1 APDUs supported

Table B-26 — APDUs supported in Status FU

	Status FU APDU	Ref	Status	Support	Comment
1	R-Status-RI	4.2.2	m		
2	R-Status-RC (Normal Result)	4.2.2	m		
3	R-Status-RC (Error Result)	4.2.2	m		

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B.5.2 R-Status APDUs

Table B-27 — R-Status-RI APDU

R-Status-RI Field Name		Ref	Status	Support	Values Allowed	Values Supported	Comment
1	operationID	4.1.5.2.1	m				
2	controlledDialogue	4.1.5.2.1	c.5		–	–	
3	dialogueIDClientInvocation	4.1.5.2.1	c.9		–	–	
4	apTitle	4.1.5.2.1	c.9				
5	aeQualifier	4.1.5.2.1	c.9				
6	apInvocationID	4.1.5.2.1	c.9				
7	aeInvocationID	4.1.5.2.1	c.9				
8	dialogueIDSuffix	4.1.5.2.1	c.9				
9	ostring	4.1.5.2.1	m				
10	controlAuthenticationData	4.1.5.2.1	c.9		–	–	
11	cstring	4.1.5.2.1	c.12				
12	ostring	4.1.5.2.1	c.12				
13	bstring	4.1.5.2.1	c.12				
14	listOfOperationID	4.1.5.2.1	o				
15	operationID	4.1.5.2.1	c.10				

Table B-28 — R-Status-RC (Normal Result) APDU

R-Status-RC (Normal Result) Field Name		Ref	Status	Support	Values Allowed	Values Supported	Comment
1	operationID	4.1.5.2.1	m				
2	listOfStatusInformation	4.1.5.2.1	m		–	–	
3	operationID	4.1.5.2.1	m				
4	operationStatus	4.1.5.2.1	m		1-6		

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Table B-29 — R-Status-RC (Error Result) APDU

	R-Status-RC (Error Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.5.2.1	m				
2	controlAuthenticationFailure	4.1.5.2.1	c.5		–	–	
3	controlServicesNotAllowed	4.1.5.2.1	m				
4	dialogueIDUnknown	4.1.5.2.1	c.5				
5	duplicateOperationID	4.1.5.2.1	m		–	–	
6	invalidSequence	4.1.5.2.1	m		–	–	
7	diagnosticInformation	4.1.5.2.1	m		1-7		
8	operationAborted	4.1.5.2.1	m		–	–	
9	errorType	4.1.5.2.1	d		0-1		
10	diagnosticInformation	4.1.5.2.1	m				
11	serviceNotNegotiated	4.1.5.2.1	m		–	–	

B.6 Resource Handling functional unit

B.6.1 APDUs supported

Table B-30 — APDUs supported in Resource Handling FU

	Resource Handling FU APDU	Ref	Status	Support	Comment
1	R-Open-RI	4.2.2	m		
2	R-Open-RC (Normal Result)	4.2.2	m		
3	R-Open-RC (Error Result)	4.2.2	m		
4	R-Close-RI	4.2.2	m		
5	R-Close-RC (Normal Result)	4.2.2	m		
6	R-Close-RC (Error Result)	4.2.2	m		

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B.6.2 R-Open APDUs

Table B-31 — R-Open-RI APDU

	R-Open-RI Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.6.1.1	m				
2	dataResourceHandle	4.1.6.1.1	m				
3	dataResourceName	4.1.6.1.1	o		–	–	
4	sQLAccessControlData	4.1.6.1.1	o		–	–	
5	cstring	4.1.6.1.1	c.14				
6	ostring	4.1.6.1.1	c.14				
7	bstring	4.1.6.1.1	c.14				
8	sQLUsageMode	4.1.6.1.1	d		0-1		
9	sQLOpenArgument	4.1.6.1.1	o		–	–	
10	charSet	4.1.6.1.1	o				
11	sQLConformanceLevel	4.1.6.1.1	o.6		See Table B-32	See Table B-32	

Table B-32 — SQL Conformance Level

	sQLConformanceLevel Values		Comment
	Allowed	Supported	
1	iso (1) standard (0) 9075 edition1987 (0)		
2	iso (1) standard (0) 9075 edition1989 (1) IntegrityNo (0) Low (0)		
3	iso (1) standard (0) 9075 edition1989 (1) IntegrityNo (0) Intermediate (1)		
4	iso (1) standard (0) 9075 edition1989 (1) IntegrityYes (1) Low (0)		
5	iso (1) standard (0) 9075 edition1989 (1) IntegrityYes (1) Intermediate (1)		
6	iso (1) standard (0) 9075 edition1992 (2) Low (0)		

Table B-33 — R-Open-RC (Normal Result) APDU

	R-Open-RC (Normal Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.6.1.1	m				
2	sQLOpenResult	4.1.6.1.1	m		–	–	
3	charSet	4.1.6.1.1	m				
4	charSetNotSupported	4.1.6.1.1	c.11		TRUE/FALSE		
5	sQLConformanceLevel	4.1.6.1.1	m		See Table B-34	See Table B-34	

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Table B-34 — SQL Conformance Level

	sQLConformanceLevel Values		Comment
	Allowed	Supported	
1	iso (1) standard (0) 9075 edition1987 (0)		
2	iso (1) standard (0) 9075 edition1989 (1) IntegrityNo (0) Low (0)		
3	iso (1) standard (0) 9075 edition1989 (1) IntegrityNo (0) Intermediate (1)		
4	iso (1) standard (0) 9075 edition1989 (1) IntegrityYes (1) Low (0)		
5	iso (1) standard (0) 9075 edition1989 (1) IntegrityYes (1) Intermediate (1)		
6	iso (1) standard (0) 9075 edition1992 (2) Low (0)		

Table B-35 — R-Open-RC (Error Result) APDU

	R-Open-RC (Error Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.6.1.1	m				
2	dataResourceAlreadyOpen	4.1.6.1.1	m		–	–	
3	dataResourceHandle	4.1.6.1.1	m				
4	dataResourceNameNotSpecified	4.1.6.1.1	m		–	–	
5	dataResourceNotAvailable	4.1.6.1.1	m		–	–	
6	errorType	4.1.6.1.1	m		0-1		
7	diagnosticInformation	4.1.6.1.1	m		–	–	
8	dataResourceUnknown	4.1.6.1.1	m		–	–	
9	duplicateDataResourceHandle	4.1.6.1.1	m		–	–	
10	duplicateOperationID	4.1.6.1.1	m		–	–	
11	invalidSequence	4.1.6.1.1	m		–	–	
12	diagnosticInformation	4.1.6.1.1	m		1-7		
13	operationAborted	4.1.6.1.1	m		–	–	
14	errorType	4.1.6.1.1	d		0-1		
15	diagnosticInformation	4.1.6.1.1	m				
16	operationCancelled	4.1.6.1.1	c.16		–	–	
17	serviceNotNegotiated	4.1.6.1.1	m		–	–	
18	sQLOpenError	4.1.6.1.1	m		–	–	
19	invalidSQLConformanceLevel	4.1.6.1.1	m		–	–	
20	rDATransactionOpen	4.1.6.1.1	m		–	–	
21	sQLAccessControlViolation	4.1.6.1.1	m		–	–	
22	sQLDatabaseResourceAlreadyOpen	4.1.6.1.1	m		–	–	

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B.6.3 R-Close APDUs

Table B-36 — R-Close-RI APDU

	R-Close-RI Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.6.1.2	m				
2	listOfDataResourceHandle	4.1.6.1.2	o				
3	dataResourceHandle	4.1.6.1.2	c.17				

Table B-37 — R-Close-RC (Normal Result) APDU

	R-Close-RC (Normal Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.6.1.2	m				
2	listOfCloseExceptions	4.1.6.1.2	o		–	–	
3	dataResourceHandle	4.1.6.1.2	m				
4	closeException	4.1.6.1.2	m		–	–	
5	dataResourceHandleUnknown	4.1.6.1.2	m				

Table B-38 — R-Close-RC (Error Result) APDU

	R-Close-RC (Error Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.6.1.2	m				
2	duplicateOperationID	4.1.6.1.2	m		–	–	
3	invalidSequence	4.1.6.1.2	m		–	–	
4	diagnosticInformation	4.1.6.1.2	m		1-7		
5	operationAborted	4.1.6.1.2	m		–	–	
6	errorType	4.1.6.1.2	d		0-1		
7	diagnosticInformation	4.1.6.1.2	m				
8	operationCancelled	4.1.6.1.2	c.16		–	–	
9	serviceNotNegotiated	4.1.6.1.2	m		–	–	
10	sQLCloseError	4.1.6.1.2	m		–	–	
11	rDATransactionOpen	4.1.6.1.2	m		–	–	

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B.7 Immediate Execution DBL functional unit

B.7.1 APDUs supported

Table B-39 — APDUs supported in Immediate Execution DBL FU

	Immediate Execution DBL FU APDU	Ref	Status	Support	Comment
1	R-ExecuteDBL-RI	4.2.2	m		
2	R-ExecuteDBL-RC (Normal Result)	4.2.2	m		
3	R-ExecuteDBL-RC (Error Result)	4.2.2	m		

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B.7.2 R-ExecuteDBL APDUs

Table B-40 — R-ExecuteDBL-RI APDU

	R-ExecuteDBL-RI Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.1.1	m				
2	dataResourceHandle	4.1.7.1.1	o				
3	sQLDBLStatement	4.1.7.1.1	m		–	–	
4	statementText	4.1.7.1.1	m				
5	charSet	4.1.7.1.1	m				
6	sQLDBLArgumentSpecification	4.1.7.1.1	m		–	–	
7	listOfSQLDataTypeDescriptor	4.1.7.1.1	m		–	–	
8	SQLDataTypeDescriptor	4.1.7.1.1	m		See Table B-43	See Table B-43	
9	sQLDBLResultSpecification	4.1.7.1.1	o		–	–	
10	listOfSQLDataTypeDescriptor	4.1.7.1.1	c.18		–	–	
11	SQLDataTypeDescriptor	4.1.7.1.1	c.18		See Table B-43	See Table B-43	
12	dblArguments	4.1.7.1.1	m		–	–	
13	singleArgument	4.1.7.1.1	m		–	–	
14	repetitionCount	4.1.7.1.1	d				
15	sQLDBLArgumentValues	4.1.7.1.1	m		–	–	
16	listOfSQLValue	4.1.7.1.1	m		–	–	
17	SQLValue	4.1.7.1.1	m		–	–	
18	dataItem	4.1.7.1.1	m		0-7		
19	indicator	4.1.7.1.1	m				
20	multipleArgument	4.1.7.1.1	o		–	–	
21	listOfSQLDBLArgumentValues	4.1.7.1.1	c.19		–	–	
22	sQLDBLArgumentValues	4.1.7.1.1	c.19		–	–	
23	listOfSQLValue	4.1.7.1.1	c.19		–	–	
24	SQLValue	4.1.7.1.1	c.19		–	–	
25	dataItem	4.1.7.1.1	c.19		0-7		
26	indicator	4.1.7.1.1	c.19				

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Table B-41 — R-ExecuteDBL-RC (Normal Result) APDU

R-ExecuteDBL-RC (Normal Result) Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.1.1	m				
2	sQLDBLResultSpecification	4.1.7.1.1	m		–	–	
3	listOfSQLDataTypeDescriptor	4.1.7.1.1	m		–	–	
4	SQLDataTypeDescriptor	4.1.7.1.1	m		See Table B-44	See Table B-44	
5	listOfResultValues	4.1.7.1.1	m		–	–	
6	resultValues	4.1.7.1.1	m		–	–	
7	sQLDBLException	4.1.7.1.1	m		–	–	
8	sQLSTATE	4.1.7.1.1	c.20				
9	sQLCODE	4.1.7.1.1	c.21				
10	sQLErrorText	4.1.7.1.1	m				
11	sQLDBLResultValues	4.1.7.1.1	m		–	–	
12	listOfSQLValue	4.1.7.1.1	m		–	–	
13	SQLValue	4.1.7.1.1	m		–	–	
14	dataItem	4.1.7.1.1	m		0-7		
15	Indicator	4.1.7.1.1	m				

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Table B-42 — R-ExecuteDBL-RC (Error Result) APDU

R-ExecuteDBL-RC (Error Result) Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.1.1	m				
2	badRepetitionCount	4.1.7.1.1	m		–	–	
3	dataResourceHandleNotSpecified	4.1.7.1.1	m		–	–	
4	dataResourceHandleUnknown	4.1.7.1.1	m		–	–	
5	duplicateOperationID	4.1.7.1.1	m		–	–	
6	invalidSequence	4.1.7.1.1	m		–	–	
7	diagnosticInformation	4.1.7.1.1	m		1-7		
8	noDataResourceAvailable	4.1.7.1.1	m		–	–	
9	operationAborted	4.1.7.1.1	m		–	–	
10	errorType	4.1.7.1.1	d		0-1		
11	diagnosticInformation	4.1.7.1.1	m				
12	operationCancelled	4.1.7.1.1	c.16		–	–	
13	serviceNotNegotiated	4.1.7.1.1	m		–	–	
14	transactionRolledBack	4.1.7.1.1	c.22		–	–	
15	hostIdentifierError	4.1.7.1.1	m		–	–	
16	rDATransactionNotOpen	4.1.7.1.1	m		–	–	
17	sQLDBLArgumentCountMismatch	4.1.7.1.1	m		–	–	
18	sQLDBLArgumentTypeMismatch	4.1.7.1.1	m		–	–	
19	sQLDBLNoCharSet	4.1.7.1.1	m		–	–	
20	sQLDBLTransactionStatementNotAllowed	4.1.7.1.1	m		–	–	
21	sQLUsageModeViolation	4.1.7.1.1	m		–		

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Table B-43 — SQL Data Type Descriptor Argument

SQLDataTypeDescriptor Argument Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	nullable	4.1.7.1.1	d		TRUE/FALSE		
2	colName	4.1.7.1.1	o				
3	characterType	4.1.7.1.1	m		–	–	
4	charSet	4.1.7.1.1	m				
5	length	4.1.7.1.1	m				
6	fixedLengthEncoding	4.1.7.1.1	m		TRUE/FALSE		
7	numericType	4.1.7.1.1	m		–	–	
8	precision	4.1.7.1.1	m				
9	scale	4.1.7.1.1	m				
10	decimalType	4.1.7.1.1	m		–	–	
11	precision	4.1.7.1.1	m				
12	scale	4.1.7.1.1	m				
13	integerType	4.1.7.1.1	m		–	–	
14	precision	4.1.7.1.1	m				
15	precisionBase	4.1.7.1.1	m		0-1		
16	smallIntType	4.1.7.1.1	m		–	–	
17	precision	4.1.7.1.1	m				
18	precisionBase	4.1.7.1.1	m		0-1		
19	floatType	4.1.7.1.1	m		–	–	
20	mantissaPrecision	4.1.7.1.1	m				
21	maxExponent	4.1.7.1.1	m				
22	realType	4.1.7.1.1	m		–	–	
23	mantissaPrecision	4.1.7.1.1	m				
24	maxExponent	4.1.7.1.1	m				
25	doublePrecisionType	4.1.7.1.1	m		–	–	
26	mantissaPrecision	4.1.7.1.1	m				
27	maxExponent	4.1.7.1.1	m				

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Table B-44 — SQL Data Type Descriptor Result

SQLDataTypeDescriptor Result Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	nullable	4.1.7.1.1	d		TRUE/FALSE		
2	colName	4.1.7.1.1	o				
3	characterType	4.1.7.1.1	m		–	–	
4	charSet	4.1.7.1.1	m				
5	length	4.1.7.1.1	m				
6	fixedLengthEncoding	4.1.7.1.1	m		TRUE/FALSE		
7	numericType	4.1.7.1.1	m		–	–	
8	precision	4.1.7.1.1	m				
9	scale	4.1.7.1.1	m				
10	decimalType	4.1.7.1.1	m		–	–	
11	precision	4.1.7.1.1	m				
12	scale	4.1.7.1.1	m				
13	integerType	4.1.7.1.1	m		–	–	
14	precision	4.1.7.1.1	m				
15	precisionBase	4.1.7.1.1	m		0-1		
16	smallIntType	4.1.7.1.1	m		–	–	
17	precision	4.1.7.1.1	m				
18	precisionBase	4.1.7.1.1	m		0-1		
19	floatType	4.1.7.1.1	m		–	–	
20	mantissaPrecision	4.1.7.1.1	m				
21	maxExponent	4.1.7.1.1	m				
22	realType	4.1.7.1.1	m		–	–	
23	mantissaPrecision	4.1.7.1.1	m				
24	maxExponent	4.1.7.1.1	m				
25	doublePrecisionType	4.1.7.1.1	m		–	–	
26	mantissaPrecision	4.1.7.1.1	m				
27	maxExponent	4.1.7.1.1	m				

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B.8 Stored Execution DBL functional unit

B.8.1 APDUs supported

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Table B-45 — APDUs supported in Stored Execution DBL FU

	Stored Execution DBL FU APDU	Ref	Status	Support	Comment
1	R-DefineDBL-RI	4.2.2	m		
2	R-DefineDBL-RC (Normal Result)	4.2.2	m		
3	R-DefineDBL-RC (Error Result)	4.2.2	m		
4	R-InvokeDBL-RI	4.2.2	m		
5	R-InvokeDBL-RC (Normal Result)	4.2.2	m		
6	R-InvokeDBL-RC (Error Result)	4.2.2	m		
7	R-DropDBL-RI	4.2.2	m		
8	R-DropDBL-RC (Normal Result)	4.2.2	m		
9	R-DropDBL-RC (Error Result)	4.2.2	m		

B.8.2 R-DefineDBL APDUs

Table B-46 — R-DefineDBL-RI APDU

	R-DefineDBL-RI Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.2.1	m				
2	commandHandle	4.1.7.2.1	m				
3	dataResourceHandle	4.1.7.2.1	o				
4	sQLDBLStatement	4.1.7.2.1	m		–	–	
5	statementText	4.1.7.2.1	m				
6	charSet	4.1.7.2.1	m				
7	sQLDBLArgumentSpecification	4.1.7.1.1	m		–	–	
8	listOfSQLDataTypeDescriptor	4.1.7.2.1	m		–	–	
9	SQLDataTypeDescriptor	4.1.7.2.1	m		See Table B-43	See Table B-43	
10	sQLDBLResultSpecification	4.1.7.2.1	o		–	–	
11	listOfSQLDataTypeDescriptor	4.1.7.2.1	c.18		–	–	
12	SQLDataTypeDescriptor	4.1.7.2.1	c.18		See Table B-43	See Table B-43	

Table B-47 — R-DefineDBL-RC (Normal Result) APDU

	R-DefineDBL-RC (Normal Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.2.1	m				
2	sQLDBLResultSpecification	4.1.7.2.1	m		–	–	
3	listOfSQLDataTypeDescriptor	4.1.7.2.1	m		–	–	
4	SQLDataTypeDescriptor	4.1.7.2.1	m		See Table B-44	See Table B-44	
5	sQLDBLException	4.1.7.2.1	m		–	–	
6	sQLSTATE	4.1.7.2.1	c.20				
7	sQLCODE	4.1.7.2.1	c.21				
8	sQLErrorText	4.1.7.2.1	m				

Table B-48 — R-DefineDBL-RC (Error Result) APDU

	R-DefineDBL-RC (Error Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.2.1	m				
2	dataResourceHandleNotSpecified	4.1.7.2.1	m			–	
3	dataResourceHandleUnknown	4.1.7.2.1	m			–	
4	duplicateCommandHandle	4.1.7.2.1	m		–	–	
5	duplicateOperationID	4.1.7.2.1	m		–	–	
6	invalidSequence	4.1.7.2.1	m		–	–	
7	diagnosticInformation	4.1.7.2.1	m		1-7		
8	noDataResourceAvailable	4.1.7.2.1	m		–		
9	operationAborted	4.1.7.2.1	m		–	–	
10	errorType	4.1.7.2.1	d		0-1		
11	diagnosticInformation	4.1.7.2.1	m				
12	operationCancelled	4.1.7.2.1	c.16		–	–	
13	serviceNotNegotiated	4.1.7.2.1	m		–	–	
14	hostIdentifierError	4.1.7.2.1	m		–	–	
15	sQLDBLNoCharSet	4.1.7.2.1	m		–	–	
16	sQLDBLTransactionStatementNotAllowed	4.1.7.2.1	m		–	–	
17	sQLUsageModeViolation	4.1.7.2.1	m		–	–	

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B.8.3 R-InvokeDBL APDUs

Table B-49 — R-InvokeDBL-RI APDU

	R-InvokeDBL-RI Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.2.2	m				
2	commandHandle	4.1.7.2.2	m				
3	dblArguments	4.1.7.2.2	m		–	–	
4	singleArgument	4.1.7.2.2	m		–	–	
5	repetitionCount	4.1.7.2.2	d				
6	sQLDBLArgumentValues	4.1.7.2.2	m		–	–	
7	listOfSQLValue	4.1.7.2.2	m		–	–	
8	SQLValue	4.1.7.2.2	m		–	–	
9	dataItem	4.1.7.2.2	m		0-7		
10	indicator	4.1.7.2.2	m				
11	multipleArgument	4.1.7.2.2	o		–	–	
12	listOfSQLDBLArgumentValues	4.1.7.2.2	c.19		–	–	
13	sQLDBLArgumentValues	4.1.7.2.2	c.19		–	–	
14	listOfSQLValue	4.1.7.2.2	c.19		–	–	
15	SQLValue	4.1.7.2.2	c.19		–	–	
16	dataItem	4.1.7.2.2	c.19		0-7		
17	indicator	4.1.7.2.2	c.19				

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Table B-50 — R-InvokeDBL-RC (Normal Result) APDU

R-InvokeDBL-RC (Normal Result) Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.2.2	m				
2	sQLDBLResultSpecification	4.1.7.2.2	m		–	–	
3	listOfSQLDataTypeDescriptor	4.1.7.2.2	m		–	–	
4	SQLDataTypeDescriptor	4.1.7.2.2	m		See Table B-44	See Table B-44	
5	listOfResultValues	4.1.7.2.2	m		–	–	
6	resultValues	4.1.7.2.2	m		–	–	
7	sQLDBLException	4.1.7.2.2	m		–	–	
8	sQLSTATE	4.1.7.2.2	c.20				
9	sQLCODE	4.1.7.2.2	c.21				
10	sQLErrorText	4.1.7.2.2	m				
11	sQLDBLResultValues	4.1.7.2.2	m		–	–	
12	listOfSQLValue	4.1.7.2.2	m		–	–	
13	SQLValue	4.1.7.2.2	m		–	–	
14	dataItem	4.1.7.2.2	m		0-7		
15	indicator	4.1.7.2.2	m				

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Table B-51 — R-InvokeDBL-RC (Error Result) APDU

	R-InvokeDBL-RC (Error Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.2.2	m				
2	badRepetitionCount	4.1.7.2.2	m		–	–	
3	commandHandleUnknown	4.1.7.2.2	m		–	–	
4	duplicateOperationID	4.1.7.2.2	m		–	–	
5	invalidSequence	4.1.7.2.2	m		–	–	
6	diagnosticInformation	4.1.7.2.2	m		1-7		
7	operationAborted	4.1.7.2.2	m		–	–	
8	errorType	4.1.7.2.2	d		0-1		
9	diagnosticInformation	4.1.7.2.2	m				
10	operationCancelled	4.1.7.2.2	c.16		–	–	
11	serviceNotNegotiated	4.1.7.2.2	m		–	–	
12	transactionRolledBack	4.1.7.2.2	c.22		–	–	
13	rDATransactionNotOpen	4.1.7.2.2	m		–	–	
14	sQLDBLArgumentCountMismatch	4.1.7.2.2	m		–	–	
15	sQLDBLArgumentTypeMismatch	4.1.7.2.2	m		–	–	
16	sQLUsageModeViolation	4.1.7.2.2	m		–	–	

B.8.4 R-DropDBL APDUs

Table B-52 — R-DropDBL-RI APDU

	R-DropDBL-RI Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.2.3	m				
2	listOfCommandHandle	4.1.7.2.3	o		–	–	
3	commandHandle	4.1.7.2.3	c.23				

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Table B-53 — R-DropDBL-RC (Normal Result) APDU

R-DropDBL-RC (Normal Result) Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.2.3	m				
2	listOfDropDBLExceptions	4.1.7.2.3	m		–	–	
3	commandHandle	4.1.7.2.3	m				
4	dropDBLException	4.1.7.2.3	m		–	–	
5	commandHandleUnknown	4.1.7.2.3	m		–	–	

Table B-54 — R-DropDBL-RC (Error Result) APDU

R-DropDBL-RC (Error Result) Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.2.3	m				
2	duplicateOperationID	4.1.7.2.3	m		–	–	
3	invalidSequence	4.1.7.2.3	m		–	–	
4	diagnosticInformation	4.1.7.2.3	m		1-7		
5	operationAborted	4.1.7.2.3	m		–	–	
6	errorType	4.1.7.2.3	d		0-1		
7	diagnosticInformation	4.1.7.2.3	m				
8	operationCancelled	4.1.7.2.3	c.16		–	–	
9	serviceNotNegotiated	4.1.7.2.3	m		–	–	

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Annex C

(normative)

Remote Database Access — SQL Specialization

Protocol Implementation Conformance Statement (PICS) Proforma

Specific Conformance Requirements

for

Server Role in RDA SQL Basic Application-Context

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NOTES
1. This Annex should only be completed after completing Annex A.
2. Refer to clause 7 for an explanation of notation used in this Annex.
3. Refer to clauses 8 and A.4 for guidance on completing this Annex.

C.1 Dialogue Initialization functional unit

C.1.1 APDUs supported

Table C-1 — APDUs supported in Dialogue Initialization FU

	Dialogue Initialization FU APDU	Ref	Status	Support	Comment
1	R-Initialize-RI	4.2.2	m		
2	R-Initialize-RC (Normal Result)	4.2.2	m		
3	R-Initialize-RC (Error Result)	4.2.2	m		
4	R-Synchronize-RI	4.2.2	m		

C.1.2 R-Initialize APDUs

Table C-2 — R-Initialize-RI APDU

	R-Initialize-RI Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.3.1.1	m				
2	dialogueIDSuffix	4.1.3.1.1	m		–	–	
3	ostring	4.1.3.1.1	o.10				
4	identityOfUser	4.1.3.1.1	m		–	–	
5	userAuthenticationData	4.1.3.1.1	o		–	–	
6	cstring	4.1.3.1.1	c.24				
7	ostring	4.1.3.1.1	c.24				
8	bstring	4.1.3.1.1	c.24				
9	controlServiceDataRequested	4.1.3.1.1	d		TRUE/FALSE		
10	functionalUnitsRequested	4.1.3.1.1	m		See Table C-3	See Table C-3	
11	sQLConformanceLevelDefault	4.1.3.1.1	m		See Table C-4	See Table C-4	
12	userData	4.1.3.1.1	o				

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Table C-3 — Functional Units Requested

	functionalUnitsRequested Values		Comment
	Allowed	Supported	
1	termination		
2	transaction		
3	cancel		
4	status		
5	resource		
6	immediate-DBL		
7	stored-DBL		

Table C-4 — SQL Conformance Level Default

	sQLConformanceLevelDefault Values		Comment
	Allowed	Supported	
1	iso (1) standard (0) 9075 edition1987 (0)		
2	iso (1) standard (0) 9075 edition1989 (1) IntegrityNo (0) Low (0)		
3	iso (1) standard (0) 9075 edition1989 (1) IntegrityNo (0) Intermediate (1)		
4	iso (1) standard (0) 9075 edition1989 (1) IntegrityYes (1) Low (0)		
5	iso (1) standard (0) 9075 edition1989 (1) IntegrityYes (1) Intermediate (1)		
6	iso (1) standard (0) 9075 edition1992 (2) Low (0)		

Table C-5 — R-Initialize-RC (Normal Result) APDU

	R-Initialize-RC (Normal Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.3.1.1	m				
2	controlServiceData	4.1.3.1.1	m		–	–	
3	controlServicesAllowed	4.1.3.1.1	m		TRUE/FALSE		
4	controlAuthenticationData	4.1.3.1.1	c.25		–	–	
5	cstring	4.1.3.1.1	c.26				
6	ostring	4.1.3.1.1	c.26				
7	bstring	4.1.3.1.1	c.26				
8	functionalUnitsAllowed	4.1.3.1.1	m		See Table C-6	See Table C-6	
9	userData	4.1.3.1.1	o				

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Table C-6 — Functional Units Allowed

	functionalUnitsAllowed Values		Comment
	Allowed	Supported	
1	termination		
2	transaction		
3	cancel		
4	status		
5	resource		
6	immediate-DBL		
7	stored-DBL		

Table C-7 — R-Initialize-RC (Error Result) APDU

	R-Initialize-RC (Error Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.3.1.1	m				
2	accessControlViolation	4.1.3.1.1	m		–	–	
3	duplicateDialogueID	4.1.3.1.1	m		–	–	
4	invalidSequence	4.1.3.1.1	m		–	–	
5	diagnosticInformation	4.1.3.1.1	m		1-7		
6	operationAborted	4.1.3.1.1	m		–	–	
7	errorType	4.1.3.1.1	d		0-1		
8	diagnosticInformation	4.1.3.1.1	o				
9	userAuthenticationFailure	4.1.3.1.1	m		–	–	

C.1.3 R-Synchronize APDU

Table C-8 — R-Synchronize-RI APDU

	R-Synchronize-RI Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	–	4.2.2	m		–	–	

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C.2 Dialogue Termination functional unit

C.2.1 APDUs supported

Table C-9 — APDUs supported in Dialogue Termination FU

Dialogue Termination FU APDU		Ref	Status	Support	Comment
1	R-Terminate-RI	4.2.2	m		
2	R-Terminate-RC (Normal Result)	4.2.2	m		
3	R-Terminate-RC (Error Result)	4.2.2	m		

C.2.2 R-Terminate APDUs

Table C-10 — R-Terminate-RI APDU

R-Terminate-RI Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.3.2.1	m				

Table C-11 — R-Terminate-RC (Normal Result) APDU

R-Terminate-RC (Normal Result) Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.3.2.1	m				

Table C-12 — R-Terminate-RC (Error Result) APDU

R-Terminate-RC (Error Result) Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.3.2.1	m				
2	duplicateOperationID	4.1.3.2.1	m		–	–	
3	invalidSequence	4.1.3.2.1	m		–	–	
4	diagnosticInformation	4.1.3.2.1	m		1-7		
5	operationAborted	4.1.3.2.1	m		–	–	
6	errorType	4.1.3.2.1	d		0-1		
7	diagnosticInformation	4.1.3.2.1	o				
8	serviceNotNegotiated	4.1.3.2.1	m		–	–	

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C.3 RDA Transaction Management functional unit

C.3.1 APDUs supported

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Table C-13 — APDUs supported in Transaction Management FU

	Transaction Management FU APDU	Ref	Status	Support	Comment
1	R-BeginTransaction-RI	4.2.2	m		
2	R-BeginTransaction-RC (Error Result)	4.2.2	m		
3	R-Commit-RI	4.2.2	m		
4	R-Commit-RC (Normal Result)	4.2.2	m		
5	R-Commit-RC (Error Result)	4.2.2	m		
6	R-Rollback-RI	4.2.2	m		
7	R-Rollback-RC (Normal Result)	4.2.2	m		
8	R-Rollback-RC (Error Result)	4.2.2	m		

C.3.2 R-BeginTransaction APDUs

Table C-14 — R-BeginTransaction-RI APDU

	R-BeginTransaction-RI Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.4.1.1	m				

Table C-15 — R-BeginTransaction-RC (Error Result) APDU

	R-BeginTransaction-RC (Error Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.4.1.1	m				
2	duplicateOperationID	4.1.4.1.1	m		–	–	
3	invalidSequence	4.1.4.1.1	m		–	–	
4	diagnosticInformation	4.1.4.1.1	m		1-7		
5	operationAborted	4.1.4.1.1	m		–	–	
6	errorType	4.1.4.1.1	d		0-1		
7	diagnosticInformation	4.1.4.1.1	o				
8	serviceNotNegotiated	4.1.4.1.1	m		–	–	

C.3.3 R-Commit APDUs

Table C-16 — R-Commit-RI APDU

R-Commit-RI Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.4.1.2	m				

Table C-17 — R-Commit-RC (Normal Result) APDU

R-Commit-RC (Normal Result) Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.4.1.2	m				
2	transactionResult	4.1.4.1.2	m		0-1		

Table C-18 — R-Commit-RC (Error Result) APDU

R-Commit-RC (Error Result) Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.4.1.2	m				
2	duplicateOperationID	4.1.4.1.2	m		–	–	
3	invalidSequence	4.1.4.1.2	m		–	–	
4	diagnosticInformation	4.1.4.1.2	m		1-7		

C.3.4 R-Rollback APDUs

Table C-19 — R-Rollback-RI APDU

R-Rollback-RI Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.4.1.3	m				

Table C-20 — R-Rollback-RC (Normal Result) APDU

R-Rollback-RC (Normal Result) Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.4.1.3	m				

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Table C-21 — R-Rollback-RC (Error Result) APDU

	R-Rollback-RC (Error Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.4.1.3	m				
2	duplicateOperationID	4.1.4.1.3	m		–	–	
3	invalidSequence	4.1.4.1.3	m		–	–	
4	diagnosticInformation	4.1.4.1.3	m		1-7		

C.4 Cancel functional unit

C.4.1 APDUs supported

Table C-22 — APDUs supported in Cancel FU

	Cancel FU APDU	Ref	Status	Support	Comment
1	R-Cancel-RI	4.2.2	m		
2	R-Cancel-RC (Normal Result)	4.2.2	m		
3	R-Cancel-RC (Error Result)	4.2.2	m		

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C.4.2 R-Cancel APDUs

Table C-23 — R-Cancel-RI APDU

R-Cancel-RI Field Name		Ref	Status	Support	Values Allowed	Values Supported	Comment
1	operationID	4.1.5.1.1	m				
2	controlledDialogue	4.1.5.1.1	c.6		–	–	
3	dialogueIDClientInvocation	4.1.5.1.1	c.9		–	–	
4	apTitle	4.1.5.1.1	c.9				
5	aeQualifier	4.1.5.1.1	c.9				
6	apInvocationID	4.1.5.1.1	c.9				
7	aeInvocationID	4.1.5.1.1	c.9				
8	dialogueIDSuffix	4.1.5.1.1	c.9				
9	ostring	4.1.5.1.1	m				
10	controlAuthenticationData	4.1.5.1.1	c.9		–	–	
11	cstring	4.1.5.1.1	c.8				
12	ostring	4.1.5.1.1	c.8				
13	bstring	4.1.5.1.1	c.8				
14	listOfOperationID	4.1.5.1.1	m				
15	operationID	4.1.5.1.1	m				

Table C-24 — R-Cancel-RC (Normal Result) APDU

R-Cancel-RC (Normal Result) Field Name		Ref	Status	Support	Values Allowed	Values Supported	Comment
1	operationID	4.1.5.1.1	m				

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Table C-25 — R-Cancel-RC (Error Result) APDU

	R-Cancel-RC (Error Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.5.1.1	m				
2	controlAuthenticationFailure	4.1.5.1.1	c.6		–	–	
3	controlServicesNotAllowed	4.1.5.1.1	m				
4	dialogueIDUnknown	4.1.5.1.1	c.6				
5	duplicateOperationID	4.1.5.1.1	m		–	–	
6	invalidSequence	4.1.5.1.1	m		–	–	
7	diagnosticInformation	4.1.5.1.1	m		1-7		
8	operationAborted	4.1.5.1.1	m		–	–	
9	errorType	4.1.5.1.1	d		0-1		
10	diagnosticInformation	4.1.5.1.1	o				
11	serviceNotNegotiated	4.1.5.1.1	m		–	–	

C.5 Status functional unit

C.5.1 APDUs supported

Table C-26 — APDUs supported in Status FU

	Status FU APDU	Ref	Status	Support	Comment
1	R-Status-RI	4.2.2	m		
2	R-Status-RC (Normal Result)	4.2.2	m		
3	R-Status-RC (Error Result)	4.2.2	m		

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C.5.2 R-Status APDUs

Table C-27 — R-Status-RI APDU

	R-Status-RI Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.5.2.1	m				
2	controlledDialogue	4.1.5.2.1	c.6		4.1.5.2.1		
3	dialogueIDClientInvocation	4.1.5.2.1	c.11		–	–	
4	apTitle	4.1.5.2.1	c.11				
5	aeQualifier	4.1.5.2.1	c.11				
6	apInvocationID	4.1.5.2.1	c.11				
7	aeInvocationID	4.1.5.2.1	c.11				
8	dialogueIDSuffix	4.1.5.2.1	c.11				
9	ostring	4.1.5.2.1	m				
10	controlAuthenticationData	4.1.5.2.1	c.11		–	–	
11	cstring	4.1.5.2.1	c.8				
12	ostring	4.1.5.2.1	c.8				
13	bstring	4.1.5.2.1	c.8				
14	listOfOperationID	4.1.5.2.1	m				
15	operationID	4.1.5.2.1	m				

Table C-28 — R-Status-RC (Normal Result) APDU

	R-Status-RC (Normal Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.5.2.1	m				
2	listOfStatusInformation	4.1.5.2.1	m		–	–	
3	operationID	4.1.5.2.1	m				
4	operationStatus	4.1.5.2.1	m		1-6		

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Table C-29 — R-Status-RC (Error Result) APDU

	R-Status-RC (Error Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.5.2.1	m				
2	controlAuthenticationFailure	4.1.5.2.1	c.6		–	–	
3	controlServicesNotAllowed	4.1.5.2.1	m				
4	dialogueIDUnknown	4.1.5.2.1	c.6				
5	duplicateOperationID	4.1.5.2.1	m		–	–	
6	invalidSequence	4.1.5.2.1	m		–	–	
7	diagnosticInformation	4.1.5.2.1	m		1-7		
8	operationAborted	4.1.5.2.1	m		–	–	
9	errorType	4.1.5.2.1	d		0-1		
10	diagnosticInformation	4.1.5.2.1	o				
11	serviceNotNegotiated	4.1.5.2.1	m		–	–	

C.6 Resource Handling functional unit

C.6.1 APDUs supported

Table C-30 — APDUs supported in Resource Handling FU

	Resource Handling FU APDU	Ref	Status	Support	Comment
1	R-Open-RI	4.2.2	m		
2	R-Open-RC (Normal Result)	4.2.2	m		
3	R-Open-RC (Error Result)	4.2.2	m		
4	R-Close-RI	4.2.2	m		
5	R-Close-RC (Normal Result)	4.2.2	m		
6	R-Close-RC (Error Result)	4.2.2	m		

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C.6.2 R-Open APDUs

Table C-31 — R-Open-RI APDU

	R-Open-RI Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.6.1.1	m				
2	dataResourceHandle	4.1.6.1.1	m				
3	dataResourceName	4.1.6.1.1	m		–	–	
4	sQLAccessControlData	4.1.6.1.1	o		–	–	
5	cstring	4.1.6.1.1	c.27				
6	ostring	4.1.6.1.1	c.27				
7	bstring	4.1.6.1.1	c.27				
8	sQLUsageMode	4.1.6.1.1	d		0-1		
9	sQLOpenArgument	4.1.6.1.1	m		–	–	
10	charSet	4.1.6.1.1	m				
11	sQLConformanceLevel	4.1.6.1.1	m		See Table C-32	See Table C-32	

Table C-32 — SQL Conformance Level

	sQLConformanceLevel Values		Comment
	Allowed	Supported	
1	iso (1) standard (0) 9075 edition1987 (0)		
2	iso (1) standard (0) 9075 edition1989 (1) IntegrityNo (0) Low (0)		
3	iso (1) standard (0) 9075 edition1989 (1) IntegrityNo (0) Intermediate (1)		
4	iso (1) standard (0) 9075 edition1989 (1) IntegrityYes (1) Low (0)		
5	iso (1) standard (0) 9075 edition1989 (1) IntegrityYes (1) Intermediate (1)		
6	iso (1) standard (0) 9075 edition1992 (2) Low (0)		

Table C-33 — R-Open-RC (Normal Result) APDU

	R-Open-RC (Normal Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.6.1.1	m				
2	sQLOpenResult	4.1.6.1.1	m		–	–	
3	charSet	4.1.6.1.1	o				
4	charSetNotSupported	4.1.6.1.1	m		TRUE/FALSE		
5	sQLConformanceLevel	4.1.6.1.1	m		See Table C-34	See Table C-34	

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Table C-34 — SQL Conformance Level

	sQLConformanceLevel Values		Comment
	Allowed	Supported	
1	iso (1) standard (0) 9075 edition1987 (0)		
2	iso (1) standard (0) 9075 edition1989 (1) IntegrityNo (0) Low (0)		
3	iso (1) standard (0) 9075 edition1989 (1) IntegrityNo (0) Intermediate (1)		
4	iso (1) standard (0) 9075 edition1989 (1) IntegrityYes (1) Low (0)		
5	iso (1) standard (0) 9075 edition1989 (1) IntegrityYes (1) Intermediate (1)		
6	iso (1) standard (0) 9075 edition1992 (2) Low (0)		

Table C-35 — R-Open-RC (Error Result) APDU

	R-Open-RC (Error Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.6.1.1	m				
2	dataResourceAlreadyOpen	4.1.6.1.1	m		–	–	
3	dataResourceHandle	4.1.6.1.1	m				
4	dataResourceNameNotSpecified	4.1.6.1.1	m		–	–	
5	dataResourceNotAvailable	4.1.6.1.1	m		–	–	
6	errorType	4.1.6.1.1	m		0-1		
7	diagnosticInformation	4.1.6.1.1	m		–	–	
8	dataResourceUnknown	4.1.6.1.1	m		–	–	
9	duplicateDataResourceHandle	4.1.6.1.1	m		–	–	
10	duplicateOperationID	4.1.6.1.1	m		–	–	
11	invalidSequence	4.1.6.1.1	m		–	–	
12	diagnosticInformation	4.1.6.1.1	m		1-7		
13	operationAborted	4.1.6.1.1	m		–	–	
14	errorType	4.1.6.1.1	d		0-1		
15	diagnosticInformation	4.1.6.1.1	o				
16	operationCancelled	4.1.6.1.1	c.16		–	–	
17	serviceNotNegotiated	4.1.6.1.1	m		–	–	
18	sQLOpenError	4.1.6.1.1	m		–	–	
19	invalidSQLConformanceLevel	4.1.6.1.1	m		–	–	
20	rDATransactionOpen	4.1.6.1.1	m		–	–	
21	sQLAccessControlViolation	4.1.6.1.1	m		–	–	
22	sQLDatabaseResourceAlreadyOpen	4.1.6.1.1	m		–	–	

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C.6.3 R-Close APDUs

Table C-36 — R-Close-RI APDU

R-Close-RI Field Name		Ref	Status	Support	Values Allowed	Values Supported	Comment
1	operationID	4.1.6.1.2	m				
2	listOfDataResourceHandle	4.1.6.1.2	m				
3	dataResourceHandle	4.1.6.1.2	m				

Table C-37 — R-Close-RC (Normal Result) APDU

R-Close-RC (Normal Result) Field Name		Ref	Status	Support	Values Allowed	Values Supported	Comment
1	operationID	4.1.6.1.2	m				
2	listOfCloseExceptions	4.1.6.1.2	m		–	–	
3	dataResourceHandle	4.1.6.1.2	m				
4	closeException	4.1.6.1.2	m		–	–	
5	dataResourceHandleUnknown	4.1.6.1.2	m				

Table C-38 — R-Close-RC (Error Result) APDU

R-Close-RC (Error Result) Field Name		Ref	Status	Support	Values Allowed	Values Supported	Comment
1	operationID	4.1.6.1.2	m				
2	duplicateOperationID	4.1.6.1.2	m		–		
3	invalidSequence	4.1.6.1.2	m		–	–	
4	diagnosticInformation	4.1.6.1.2	m		1-7		
5	operationAborted	4.1.6.1.2	m		–	–	
6	errorType	4.1.6.1.2	d		0-1		
7	diagnosticInformation	4.1.6.1.2	o				
8	operationCancelled	4.1.6.1.2	c.16		–	–	
9	serviceNotNegotiated	4.1.6.1.2	m		–	–	
10	sQLCloseError	4.1.6.1.2	m		–	–	
11	rDATransactionOpen	4.1.6.1.2	m		–	–	

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C.7 Immediate Execution DBL functional unit

C.7.1 APDUs supported

Table C-39 — APDUs supported in Immediate Execution DBL FU

	Immediate Execution DBL FU APDU	Ref	Status	Support	Comment
1	R-ExecuteDBL-RI	4.2.2	m		
2	R-ExecuteDBL-RC (Normal Result)	4.2.2	m		
3	R-ExecuteDBL-RC (Error Result)	4.2.2	m		

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C.7.2 R-ExecuteDBL APDUs

Table C-40 — R-ExecuteDBL-RI APDU

	R-ExecuteDBL-RI Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.1.1	m				
2	dataResourceHandle	4.1.7.1.1	m				
3	sQLDBLStatement	4.1.7.1.1	m		–	–	
4	statementText	4.1.7.1.1	m				
5	charSet	4.1.7.1.1	m				
6	sQLDBLArgumentSpecification	4.1.7.1.1	m		–	–	
7	listOfSQLDataTypeDescriptor	4.1.7.1.1	m		–	–	
8	SQLDataTypeDescriptor	4.1.7.1.1	m		See Table C-43	See Table C-43	
9	sQLDBLResultSpecification	4.1.7.1.1	m		–	–	
10	listOfSQLDataTypeDescriptor	4.1.7.1.1	m		–	–	
11	dblArguments	4.1.7.1.1	m		–	–	
12	SQLDataTypeDescriptor	4.1.7.1.1	m		See Table C-43	See Table C-43	
13	singleArgument	4.1.7.1.1	m		–	–	
14	repetitionCount	4.1.7.1.1	d				
15	sQLDBLArgumentValues	4.1.7.1.1	m		–	–	
16	listOfSQLValue	4.1.7.1.1	m		–	–	
17	SQLValue	4.1.7.1.1	m		–	–	
18	dataItem	4.1.7.1.1	m		0-7		
19	indicator	4.1.7.1.1	m				
20	multipleArgument	4.1.7.1.1	o		–	–	
21	listOfSQLDBLArgumentValues	4.1.7.1.1	c.19		–	–	
22	sQLDBLArgumentValues	4.1.7.1.1	c.19		–	–	
23	listOfSQLValue	4.1.7.1.1	c.19		–	–	
24	SQLValue	4.1.7.1.1	c.19		–	–	
25	dataItem	4.1.7.1.1	c.19		0-7		
26	indicator	4.1.7.1.1	c.19				
27	dataItem	4.1.7.1.1	m				
28	indicator	4.1.7.1.1	o				

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Table C-41 — R-ExecuteDBL-RC (Normal Result) APDU

R-ExecuteDBL-RC (Normal Result) Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.1.1	m				
2	sQLDBLResultSpecification	4.1.7.1.1	m		–	–	
3	listOfSQLDataTypeDescriptor	4.1.7.1.1	m		–	–	
4	SQLDataTypeDescriptor	4.1.7.1.1	m		See Table C-44	See Table C-44	
5	listOfResultValues	4.1.7.1.1	m		–	–	
6	resultValues	4.1.7.1.1	m		–	–	
7	sQLDBLException	4.1.7.1.1	m		–	–	
8	sQLSTATE	4.1.7.1.1	c.20				
9	sQLCODE	4.1.7.1.1	c.21				
10	sQLErrorText	4.1.7.1.1	m				
11	sQLDBLResultValues	4.1.7.1.1	m		–	–	
12	listOfSQLValue	4.1.7.1.1	m		–	–	
13	SQLValue	4.1.7.1.1	m		–	–	
14	dataItem	4.1.7.1.1	m		0-7		
15	indicator	4.1.7.1.1	m				

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Table C-42 — R-ExecuteDBL-RC (Error Result) APDU

R-ExecutDBL-RC (Error Result) Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.1.1	m				
2	badRepetitionCount	4.1.7.1.1	m		–	–	
3	dataResourceHandleNotSpecified	4.1.7.1.1	m		–	–	
4	dataResourceHandleUnknown	4.1.7.1.1	m		–	–	
5	duplicateOperationID	4.1.7.1.1	m		–	–	
6	invalidSequence	4.1.7.1.1	m		–	–	
7	diagnosticInformation	4.1.7.1.1	m		1-7		
8	noDataResourceAvailable	4.1.7.1.1	m		–	–	
9	operationAborted	4.1.7.1.1	m		–	–	
10	errorType	4.1.7.1.1	d		0-1		
11	diagnosticInformation	4.1.7.1.1	o				
12	operationCancelled	4.1.7.1.1	c.16		–	–	
13	serviceNotNegotiated	4.1.7.1.1	m		–	–	
14	transactionRolledBack	4.1.7.1.1	c.22		–	–	
15	hostIdentifierError	4.1.7.1.1	m			–	
16	rDATransactionNotOpen	4.1.7.1.1	m		–	–	
17	sQLDBLArgumentCountMismatch	4.1.7.1.1	m		–	–	
18	sQLDBLArgumentTypeMismatch	4.1.7.1.1	m		–	–	
19	sQLDBLNoCharSet	4.1.7.1.1	m		–	–	
20	sQLDBLTransactionStatementNotAllowed	4.1.7.1.1	m		–	–	
21	sQLUsageModeViolation	4.1.7.1.1	m		–	–	

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Table C-43 — SQL Data Type Descriptor Argument

SQLDataTypeDescriptor Argument Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	nullable	4.1.7.1.1	d		TRUE/FALSE		
2	colName	4.1.7.1.1	o				
3	characterType	4.1.7.1.1	m		–	–	
4	charSet	4.1.7.1.1	m				
5	length	4.1.7.1.1	m				
6	fixedLengthEncoding	4.1.7.1.1	m		TRUE/FALSE		
7	numericType	4.1.7.1.1	m		–	–	
8	precision	4.1.7.1.1	m				
9	scale	4.1.7.1.1	m				
10	decimalType	4.1.7.1.1	m		–	–	
11	precision	4.1.7.1.1	m				
12	scale	4.1.7.1.1	m				
13	integerType	4.1.7.1.1	m		–	–	
14	precision	4.1.7.1.1	m				
15	precisionBase	4.1.7.1.1	m		0-1		
16	smallIntType	4.1.7.1.1	m		–	–	
17	precision	4.1.7.1.1	m				
18	precisionBase	4.1.7.1.1	m		0-1		
19	floatType	4.1.7.1.1	m		–	–	
20	mantissaPrecision	4.1.7.1.1	m				
21	maxExponent	4.1.7.1.1	m				
22	realType	4.1.7.1.1	m		–	–	
23	mantissaPrecision	4.1.7.1.1	m				
24	maxExponent	4.1.7.1.1	m				
25	doublePrecisionType	4.1.7.1.1	m		–	–	
26	mantissaPrecision	4.1.7.1.1	m				
27	maxExponent	4.1.7.1.1	m				

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Table C-44 — SQL Data Type Descriptor Result

SQLDataTypeDescriptor Result Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	nullable	4.1.7.1.1	d		TRUE/FALSE		
2	colName	4.1.7.1.1	o				
3	characterType	4.1.7.1.1	m		–	–	
4	charSet	4.1.7.1.1	m				
5	length	4.1.7.1.1	m				
6	fixedLengthEncoding	4.1.7.1.1	m		TRUE/FALSE		
7	numericType	4.1.7.1.1	m		–	–	
8	precision	4.1.7.1.1	m				
9	scale	4.1.7.1.1	m				
10	decimalType	4.1.7.1.1	m		–	–	
11	precision	4.1.7.1.1	m				
12	scale	4.1.7.1.1	m				
13	integerType	4.1.7.1.1	m		–	–	
14	precision	4.1.7.1.1	m				
15	precisionBase	4.1.7.1.1	m		0-1		
16	smallIntType	4.1.7.1.1	m		–	–	
17	precision	4.1.7.1.1	m				
18	precisionBase	4.1.7.1.1	m		0-1		
19	floatType	4.1.7.1.1	m		–	–	
20	mantissaPrecision	4.1.7.1.1	m				
21	maxExponent	4.1.7.1.1	m				
22	realType	4.1.7.1.1	m		–	–	
23	mantissaPrecision	4.1.7.1.1	m				
24	maxExponent	4.1.7.1.1	m				
25	doublePrecisionType	4.1.7.1.1	m		–	–	
26	mantissaPrecision	4.1.7.1.1	m				
27	maxExponent	4.1.7.1.1	m				

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C.8 Stored Execution DBL functional unit

C.8.1 APDUs supported

Table C-45 — APDUs supported in Stored Execution DBL FU

	Stored Execution DBL FU APDU	Ref	Status	Support	Comment
1	R-DefineDBL-RI	4.2.2	m		
2	R-DefineDBL-RC (Normal Result)	4.2.2	m		
3	R-DefineDBL-RC (Error Result)	4.2.2	m		
4	R-InvokeDBL-RI	4.2.2	m		
5	R-InvokeDBL-RC (Normal Result)	4.2.2	m		
6	R-InvokeDBL-RC (Error Result)	4.2.2	m		
7	R-DropDBL-RI	4.2.2	m		
8	R-DropDBL-RC (Normal Result)	4.2.2	m		
9	R-DropDBL-RC (Error Result)	4.2.2	m		

C.8.2 R-DefineDBL APDUs

Table C-46 — R-DefineDBL-RI APDU

	R-DefineDBL-RI Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.2.1	m				
2	commandHandle	4.1.7.2.1	m				
3	dataResourceHandle	4.1.7.2.1	m				
4	sQLDBLStatement	4.1.7.2.1	m		–	–	
5	statementText	4.1.7.2.1	m				
6	charSet	4.1.7.2.1	m				
7	sQLDBLArgumentSpecification	4.1.7.1.1	m		–	–	
8	listOfSQLDataTypeDescriptor	4.1.7.2.1	m		–	–	
9	SQLDataTypeDescriptor	4.1.7.2.1	m		See Table C-43	See Table C-43	
10	sQLDBLResultSpecification	4.1.7.2.1	m		–	–	
11	listOfSQLDataTypeDescriptor	4.1.7.2.1	m		–	–	
12	SQLDataTypeDescriptor	4.1.7.2.1	m		See Table C-43	See Table C-43	

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Table C-47 — R-DefineDBL-RC (Normal Result) APDU

R-DefineDBL-RC (Normal Result) Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.2.1	m				
2	sQLDBLResultSpecification	4.1.7.2.1	o		–	–	
3	listOfSQLDataTypeDescriptor	4.1.7.2.1	c.18		–	–	
4	SQLDataTypeDesciptor	4.1.7.2.1	c.18		See Table C-44	See Table C-44	
5	sQLDBLException	4.1.7.2.1	o		–	–	
6	sQLSTATE	4.1.7.2.1	c.28				
7	sQLCODE	4.1.7.2.1	c.29				
8	sQLErrorText	4.1.7.2.1	c.30				

Table C-48 — R-DefineDBL-RC (Error Result) APDU

R-DefineDBL-RC (Error Result) Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.2.1	m				
2	dataResourceHandleNotSpecified	4.1.7.2.1	m		–	–	
3	dataResourceHandleUnknown	4.1.7.2.1	m		–	–	
4	duplicateCommandHandle	4.1.7.2.1	m		–	–	
5	duplicateOperationID	4.1.7.2.1	m		–	–	
6	invalidSequence	4.1.7.2.1	m		–	–	
7	diagnosticInformation	4.1.7.2.1	m		1-7		
8	noDataResourceAvailable	4.1.7.2.1	m		–	–	
9	operationAborted	4.1.7.2.1	m		–	–	
10	errorType	4.1.7.2.1	d		0-1		
11	diagnosticInformation	4.1.7.2.1	o				
12	operationCancelled	4.1.7.2.1	c.16		–	–	
13	serviceNotNegotiated	4.1.7.2.1	m		–	–	
14	hostIdentifierError	4.1.7.2.1	m		–	–	
15	sQLDBLNoCharSet	4.1.7.2.1	m		–	–	
16	sQLDBLTransactionStatementNotAllowed	4.1.7.2.1	m		–	–	
17	sQLUsageModeViolation	4.1.7.2.1	m		–	–	

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C.8.3 R-InvokeDBL APDUs

Table C-49 — R-InvokeDBL-RI APDU

	R-InvokeDBL-RI Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.2.2	m				
2	commandHandle	4.1.7.2.2	m				
3	dblArguments	4.1.7.2.2	m		–	–	
4	singleArgument	4.1.7.2.2	m		–	–	
5	repetitionCount	4.1.7.2.2	d				
6	sQLDBLArgumentValues	4.1.7.2.2	m		–	–	
7	listOfSQLValue	4.1.7.2.2	m		–	–	
8	SQLValue	4.1.7.2.2	m		–	–	
9	dataItem	4.1.7.2.2	m		0-7		
10	indicator	4.1.7.2.2	m				
11	multipleArgument	4.1.7.2.2	o		–	–	
12	listOfSQLBLArgumentValues	4.1.7.2.2	c.19		–	–	
13	sQLDBLArgumentValues	4.1.7.2.2	c.19		–	–	
14	listOfSQLValue	4.1.7.2.2	c.19		–	–	
15	SQLValue	4.1.7.2.2	c.19		–	–	
16	dataItem	4.1.7.2.2	c.19		0-7		
17	indicator	4.1.7.2.2	c.19				

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Table C-50 — R-InvokeDBL-RC (Normal Result) APDU

R-InvokeDBL-RC (Normal Result) Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.2.2	m				
2	sQLDBLResultSpecification	4.1.7.2.2	m		–	–	
3	listOfSQLDataTypeDescriptor	4.1.7.2.2	m		–	–	
4	SQLDataTypeDescriptor	4.1.7.2.2	m		See Table C-44	See Table C-44	
5	listOfResultValues	4.1.7.2.2	m		–	–	
6	resultValues	4.1.7.2.2	m		–	–	
7	sQLDBLException	4.1.7.2.2	m		–	–	
8	sQLSTATE	4.1.7.2.2	c.20				
9	sQLCODE	4.1.7.2.2	c.21				
10	sQLErrorText	4.1.7.2.2	m				
11	sQLDBLResultValues	4.1.7.2.2	m		–	–	
12	listOfSQLValue	4.1.7.2.2	m		–	–	
13	SQLValue	4.1.7.2.2	m		–	–	
14	dataItem	4.1.7.2.2	m		0-7		
15	indicator	4.1.7.2.2	m				

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Table C-51 — R-InvokeDBL-RC (Error Result) APDU

R-InvokeDBL-RC (Error Result) Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.2.2	m				
2	badRepetitionCount	4.1.7.2.2	m		–	–	
3	commandHandleUnknown	4.1.7.2.2	m		–	–	
4	duplicateOperationID	4.1.7.2.2	m		–	–	
5	invalidSequence	4.1.7.2.2	m		–	–	
6	diagnosticInformation	4.1.7.2.2	m		1-7		
7	operationAborted	4.1.7.2.2	m		–	–	
8	errorType	4.1.7.2.2	d		0-1		
9	diagnosticInformation	4.1.7.2.2	o				
10	operationCancelled	4.1.7.2.2	c.16		–	–	
11	serviceNotNegotiated	4.1.7.2.2	m		–	–	
12	transactionRolledBack	4.1.7.2.2	c.22		–	–	
13	rDATransactionNotOpen	4.1.7.2.2	m		–	–	
14	sQLDBLArgumentCountMismatch	4.1.7.2.2	m		–	–	
15	sQLDBLArgumentTypeMismatch	4.1.7.2.2	m		–	–	
16	sQLUsageModeViolation	4.1.7.2.2	m		–	–	

C.8.4 R-DropDBL APDUs

Table C-52 — R-DropDBL-RI APDU

R-DropDBL-RI Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.2.3	m				
2	listOfCommandHandle	4.1.7.2.3	m		–	–	
3	commandHandle	4.1.7.2.3	m				

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Table C-53 — R-DropDBL-RC (Normal Result) APDU

R-DropDBL-RC (Normal Result) Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.2.3	m				
2	listOfDropDBLExceptions	4.1.7.2.3	m		–	–	
3	commandHandle	4.1.7.2.3	m				
4	dropDBLException	4.1.7.2.3	m		–	–	
5	commandHandleUnknown	4.1.7.2.3	m		–	–	

Table C-54 — R-DropDBL-RC (Error Result) APDU

R-DropDBL-RC (Error Result) Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.2.3	m				
2	duplicateOperationID	4.1.7.2.3	m		–	–	
3	invalidSequence	4.1.7.2.3	m		–	–	
4	diagnosticInformation	4.1.7.2.3	m		1-7		
5	operationAborted	4.1.7.2.3	m		–	–	
6	errorType	4.1.7.2.3	d		0-1		
7	diagnosticInformation	4.1.7.2.3	o				
8	operationCancelled	4.1.7.2.3	c.16		–	–	
9	serviceNotNegotiated	4.1.7.2.3	m		–	–	

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Annex D

(normative)

Remote Database Access — SQL Specialization

Protocol Implementation Conformance Statement (PICS) Proforma

Specific Conformance Requirements

for

Client Role in RDA SQL TP Application-Context

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NOTES
1. This Annex should only be completed after completing Annex A.
2. Refer to clause 7 for an explanation of notation used in this Annex.
3. Refer to clauses 8 and A.4 for guidance on completing this Annex.
4. Although certain table headings in Annexes B and C are not relevant to this Annex, parallel table numbering has been maintained in order to facilitate cross-referencing among Annexes B-E.

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D.1 Dialogue Initialization functional unit

D.1.1 APDUs supported

Table D-1 — APDUs supported in Dialogue Initialization FU

	Dialogue Initialization FU APDU	Ref	Status	Support	Comment
1	R-Initialize-RI	4.2.2	m		
2	R-Initialize-RC (Normal Result)	4.2.2	m		
3	R-Initialize-RC (Error Result)	4.2.2	m		

D.1.2 R-Initialize APDUs

Table D-2 — R-Initialize-RI APDU

	R-Initialize-RI Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.3.1.1	m				
2	dialogueIDSuffix	4.1.3.1.1	m		–	–	
3	ostring	4.1.3.1.1	o.12				
4	identityOfUser	4.1.3.1.1	m		–	–	
5	userAuthenticationData	4.1.3.1.1	c.32		–	–	
6	cstring	4.1.3.1.1	c.31				
7	ostring	4.1.3.1.1	c.31				
8	bstring	4.1.3.1.1	c.31				
9	controlServiceDataRequested	4.1.3.1.1	d		TRUE/FALSE		
10	functionalUnitsRequested	4.1.3.1.1	m		See Table D-3	See Table D-3	
11	sQLConformanceLevelDefault	4.1.3.1.1	o.14		See Table D-4	See Table D-4	
12	userData	4.1.3.1.1	o				

Table D-3 — Functional Units Requested

	functionalUnitsRequested Values		Comment
	Allowed	Supported	
1	cancel		
2	status		
3	resource		
4	immediate-DBL		
5	stored-DBL		

NOTE — The RDA Dialogue Termination and Transaction Management functional units are not supported in the RDA SQL TP application-context.

Table D-4 — SQL Conformance Level Default

	sQLConformanceLevelDefault Values		Comment
	Allowed	Supported	
1	iso (1) standard (0) 9075 edition1987 (0)		
2	iso (1) standard (0) 9075 edition1989 (1) IntegrityNo (0) Low (0)		
3	iso (1) standard (0) 9075 edition1989 (1) IntegrityNo (0) Intermediate (1)		
4	iso (1) standard (0) 9075 edition1989 (1) IntegrityYes (1) Low (0)		
5	iso (1) standard (0) 9075 edition1989 (1) IntegrityYes (1) Intermediate (1)		
6	iso (1) standard (0) 9075 edition1992 (2) Low (0)		

Table D-5 — R-Initialize-RC (Normal Result) APDU

	R-Initialize-RC (Normal Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.3.1.1	m				
2	controlServiceData	4.1.3.1.1	c.6		–	–	
3	controlServicesAllowed	4.1.3.1.1	c.7		TRUE/FALSE		
4	controlAuthenticationData	4.1.3.1.1	c.6		–	–	
5	cstring	4.1.3.1.1	c.8				
6	ostring	4.1.3.1.1	c.8				
7	bstring	4.1.3.1.1	c.8				
8	functionalUnitsAllowed	4.1.3.1.1	m		See Table D-6	See Table D-6	
9	userData	4.1.3.1.1	o				

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Table D-6 — Functional Units Allowed

	functionalUnitsAllowed Values		Comment
	Allowed	Supported	
1	cancel		
2	status		
3	resource		
4	immediate-DBL		
5	stored-DBL		

NOTE — The RDA Dialogue Termination and Transaction Management functional units are not supported in the RDA SQL TP application-context.

Table D-7 — R-Initialize-RC (Error Result) APDU

	R-Initialize-RC (Error Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.3.1.1	m				
2	accessControlViolation	4.1.3.1.1	m		–	–	
3	duplicateDialogueID	4.1.3.1.1	m		–	–	
4	invalidSequence	4.1.3.1.1	m		–	–	
5	diagnosticInformation	4.1.3.1.1	m		1-7		
6	operationAborted	4.1.3.1.1	m		–	–	
7	errorType	4.1.3.1.1	d		0-1		
8	diagnosticInformation	4.1.3.1.1	m				
9	userAuthenticationFailure	4.1.3.1.1	m		–	–	

D.1.3 R-Synchronize APDU

NOTE — The R-Synchronize-RI APDU is not supported in the RDA SQL TP application-context.

D.2 Dialogue Termination functional unit

NOTE — The RDA Dialogue Termination functional unit is not supported in the RDA SQL TP application-context.

D.3 RDA Transaction Management functional unit

NOTE — The RDA Transaction Management functional unit is not supported in the RDA SQL TP application-context.

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D.4 Cancel functional unit

D.4.1 APDUs supported

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Table D-22 — APDUs supported in Cancel FU

	Cancel FU APDU	Ref	Status	Support	Comment
1	R-Cancel-RI	4.2.2	m		
2	R-Cancel-RC (Normal Result)	4.2.2	m		
3	R-Cancel-RC (Error Result)	4.2.2	m		

D.4.2 R-Cancel APDUs

Table D-23 — R-Cancel-RI APDU

	R-Cancel-RI Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.5.1.1	m				
2	controlledDialogue	4.1.5.1.1	c.6		–	–	
3	dialogueIDClientInvocation	4.1.5.1.1	c.9		–	–	
4	apTitle	4.1.5.1.1	c.9				
5	aeQualifier	4.1.5.1.1	c.9				
6	apInvocationID	4.1.5.1.1	c.9				
7	aeInvocationID	4.1.5.1.1	c.9				
8	dialogueIDSuffix	4.1.5.1.1	c.9				
9	ostring	4.15.1.1	m				
10	controlAuthenticationData	4.1.5.1.1	c.9		–	–	
11	cstring	4.1.5.1.1	c.33				
12	ostring	4.1.5.1.1	c.33				
13	bstring	4.1.5.1.1	c.33				
14	listOfOperationID	4.1.5.1.1	m				
15	operationID	4.1.5.1.1	m				

Table D-24 — R-Cancel-RC (Normal Result) APDU

	R-Cancel-RC (Normal Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.5.1.1	m				

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Table D-25 — R-Cancel-RC (Error Result) APDU

	R-Cancel-RC (Error Result) Field Name	Ref	Status	Support	Values Allowed	Values Supported	Comment
1	operationID	4.1.5.1.1	m				
2	controlAuthenticationFailure	4.1.5.1.1	c.6		–	–	
3	controlServicesNotAllowed	4.1.5.1.1	m				
4	dialogueIDUnknown	4.1.5.1.1	c.6				
5	duplicateOperationID	4.1.5.1.1	m		–	–	
6	invalidSequence	4.1.5.1.1	m		–	–	
7	diagnosticInformation	4.1.5.1.1	m		1-7		
8	operationAborted	4.1.5.1.1	m		–	–	
9	errorType	4.1.5.1.1	d		0-1		
10	diagnosticInformation	4.1.5.1.1	m				
11	serviceNotNegotiated	4.1.5.1.1	m		–	–	

D.5 Status functional unit

D.5.1 APDUs supported

Table D-26 — APDUs supported in Status FU

	Status FU APDU	Ref	Status	Support	Comment
1	R-Status-RI	4.2.2	m		
2	R-Status-RC (Normal Result)	4.2.2	m		
3	R-Status-RC (Error Result)	4.2.2	m		

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D.5.2 R-Status APDUs

Table D-27 — R-Status-RI APDU

R-Status-RI Field Name		Ref	Status	Support	Values Allowed	Values Supported	Comment
1	operationID	4.1.5.2.1	m				
2	controlledDialogue	4.1.5.2.1	c.6		–	–	
3	dialogueIDClientInvocation	4.1.5.2.1	c.11		–	–	
4	apTitle	4.1.5.2.1	c.11				
5	aeQualifier	4.1.5.2.1	c.11				
6	apInvocationID	4.1.5.2.1	c.11				
7	aeInvocationID	4.1.5.2.1	c.11				
8	dialogueIDSuffix	4.1.5.2.1	c.11				
9	ostring	4.1.5.2.1	m				
10	controlAuthenticationData	4.1.5.2.1	c.11		–	–	
11	cstring	4.1.5.2.1	c.34				
12	ostring	4.1.5.2.1	c.34				
13	bstring	4.1.5.2.1	c.34				
14	listOfOperationID	4.1.5.2.1	o				
15	operationID	4.1.5.2.1	c.13				

Table D-28 — R-Status-RC (Normal Result) APDU

R-Status-RC (Normal Result) Field Name		Ref	Status	Support	Values Allowed	Values Supported	Comment
1	operationID	4.1.5.2.1	m				
2	listOfStatusInformation	4.1.5.2.1	m		–	–	
3	operationID	4.1.5.2.1	m				
4	operationStatus	4.1.5.2.1	m		1-6		

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Table D-29 — R-Status-RC (Error Result) APDU

	R-Status-RC (Error Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.5.2.1	m				
2	controlAuthenticationFailure	4.1.5.2.1	c.6		–	–	
3	controlServicesNotAllowed	4.1.5.2.1	m				
4	dialogueIDUnknown	4.1.5.2.1	c.6				
5	duplicateOperationID	4.1.5.2.1	m		–	–	
6	invalidSequence	4.1.5.2.1	m		–	–	
7	diagnosticInformation	4.1.5.2.1	m		1-7		
8	operationAborted	4.1.5.2.1	m		–	–	
9	errorType	4.1.5.2.1	d		0-1		
10	diagnosticInformation	4.1.5.2.1	m				
11	serviceNotNegotiated	4.1.5.2.1	m		–	–	

D.6 Resource Handling functional unit

D.6.1 APDUs supported

Table D-30 — APDUs supported in Resource Handling FU

	Resource Handling FU APDU	Ref	Status	Support	Comment
1	R-Open-RI	4.2.2	m		
2	R-Open-RC (Normal Result)	4.2.2	m		
3	R-Open-RC (Error Result)	4.2.2	m		
4	R-Close-RI	4.2.2	m		
5	R-Close-RC (Normal Result)	4.2.2	m		
6	R-Close-RC (Error Result)	4.2.2	m		

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D.6.2 R-Open APDUs

Table D-31 — R-Open-RI APDU

	R-Open-RI Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.6.1.1	m				
2	dataResourceHandle	4.1.6.1.1	m				
3	dataResourceName	4.1.6.1.1	o		–	–	
4	sQLAccessControlData	4.1.6.1.1	m		–	–	
5	cstring	4.1.6.1.1	c.35				
6	ostring	4.1.6.1.1	c.35				
7	bstring	4.1.6.1.1	c.35				
8	sQLUsageMode	4.1.6.1.1	d		0-1		
9	sQLOpenArgument	4.1.6.1.1	c.36		–	–	
10	charSet	4.1.6.1.1	o				
11	sQLConformanceLevel	4.1.6.1.1	o.14		See Table D-32	See Table D-32	

Table D-32 — SQL Conformance Level

	sQLConformanceLevel Values		Comment
	Allowed	Supported	
1	iso (1) standard (0) 9075 edition1987 (0)		
2	iso (1) standard (0) 9075 edition1989 (1) IntegrityNo (0) Low (0)		
3	iso (1) standard (0) 9075 edition1989 (1) IntegrityNo (0) Intermediate (1)		
4	iso (1) standard (0) 9075 edition1989 (1) IntegrityYes (1) Low (0)		
5	iso (1) standard (0) 9075 edition1989 (1) IntegrityYes (1) Intermediate (1)		
6	iso (1) standard (0) 9075 edition1992 (2) Low (0)		

Table D-33 — R-Open-RC (Normal Result) APDU

	R-Open-RC (Normal Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.6.1.1	m				
2	sQLOpenResult	4.1.6.1.1	m		–	–	
3	charSet	4.1.6.1.1	m				
4	charSetNotSupported	4.1.6.1.1	c.15		TRUE/FALSE		
5	sQLConformanceLevel	4.1.6.1.1	m		See Table D-34	See Table D-34	

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Table D-34 — SQL Conformance Level

	sQLConformanceLevel Values		Comment
	Allowed	Supported	
1	iso (1) standard (0) 9075 edition1987 (0)		
2	iso (1) standard (0) 9075 edition1989 (1) IntegrityNo (0) Low (0)		
3	iso (1) standard (0) 9075 edition1989 (1) IntegrityNo (0) Intermediate (1)		
4	iso (1) standard (0) 9075 edition1989 (1) IntegrityYes (1) Low (0)		
5	iso (1) standard (0) 9075 edition1989 (1) IntegrityYes (1) Intermediate (1)		
6	iso (1) standard (0) 9075 edition1992 (2) Low (0)		

Table D-35 — R-Open-RC (Error Result) APDU

	R-Open-RC (Error Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.6.1.1	m				
2	dataResourceAlreadyOpen	4.1.6.1.1	m		–	–	
3	dataResourceHandle	4.1.6.1.1	m				
4	dataResourceNameNotSpecified	4.1.6.1.1	m		–	–	
5	dataResourceNotAvailable	4.1.6.1.1	m		–	–	
6	errorType	4.1.6.1.1	m		0-1		
7	diagnosticInformation	4.1.6.1.1	m		–	–	
8	dataResourceUnknown	4.1.6.1.1	m		–	–	
9	duplicateDataResourceHandle	4.1.6.1.1	m		–	–	
10	duplicateOperationID	4.1.6.1.1	m		–	–	
11	invalidSequence	4.1.6.1.1	m		–	–	
12	diagnosticInformation	4.1.6.1.1	m		1-7		
13	operationAborted	4.1.6.1.1	m		–	–	
14	errorType	4.1.6.1.1	d		0-1		
15	diagnosticInformation	4.1.6.1.1	m				
16	operationCancelled	4.1.6.1.1	c.16		–	–	
17	serviceNotNegotiated	4.1.6.1.1	m		–	–	
18	sQLOpenError	4.1.6.1.1	m		–	–	
19	invalidSQLConformanceLevel	4.1.6.1.1	m		–	–	
20	rDATransactionOpen	4.1.6.1.1	m		–	–	
21	sQLAccessControlViolation	4.1.6.1.1	m		–	–	
22	sQLDatabaseResourceAlreadyOpen	4.1.6.1.1	m		–	–	

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D.6.3 R-Close APDUs

Table D-36 — R-Close-RI APDU

	R-Close-RI Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.6.1.2	m				
2	listOfDataResourceHandle	4.1.6.1.2	o				
3	dataResourceHandle	4.1.6.1.2	c.17				

Table D-37 — R-Close-RC (Normal Result) APDU

	R-Close-RC (Normal Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.6.1.2	m				
2	listOfCloseExceptions	4.1.6.1.2	o		–	–	
3	dataResourceHandle	4.1.6.1.2	m				
4	closeException	4.1.6.1.2	m		–	–	
5	dataResourceHandleUnknown	4.1.6.1.2	m				

Table D-38 — R-Close-RC (Error Result) APDU

	R-Close-RC (Error Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.6.1.2	m				
2	duplicateOperationID	4.1.6.1.2	m		–	–	
3	invalidSequence	4.1.6.1.2	m		–	–	
4	diagnosticInformation	4.1.6.1.2	m		1-7		
5	operationAborted	4.1.6.1.2	m		–	–	
6	errorType	4.1.6.1.2	d		0-1		
7	diagnosticInformation	4.1.6.1.2	m				
8	operationCancelled	4.1.6.1.2	c.16		–	–	
9	serviceNotNegotiated	4.1.6.1.2	m		–	–	
10	sQLCloseError	4.1.6.1.2	m		–	–	
11	rDATransactionOpen	4.1.6.1.2	n/a		–	–	

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D.7 Immediate Execution DBL functional unit

D.7.1 APDUs supported

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Table D-39 — APDUs supported in Immediate Execution DBL FU

	Immediate Execution DBL FU APDU	Ref	Status	Support	Comment
1	R-ExecuteDBL-RI	4.2.2	m		
2	R-ExecuteDBL-RC (Normal Result)	4.2.2	m		
3	R-ExecuteDBL-RC (Error Result)	4.2.2	m		

D.7.2 R-ExecuteDBL APDUs

Table D-40 — R-ExecuteDBL-RI APDU

	R-ExecuteDBL-RI Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.1.1	m				
2	dataResourceHandle	4.1.7.1.1	o				
3	sQLDBLStatement	4.1.7.1.1	m		–	–	
4	statementText	4.1.7.1.1	m				
5	charSet	4.1.7.1.1	m				
6	sQLDBLArgumentSpecification	4.1.7.1.1	m		–	–	
7	listOfSQLDataTypeDescriptor	4.1.7.1.1	m		–	–	
8	SQLDataTypeDescriptor	4.1.7.1.1	m		See Table D-43	See Table D-43	
9	sQLDBLResultSpecification	4.1.7.1.1	o		–	–	
10	listOfSQLDataTypeDescriptor	4.1.7.1.1	c.18		–	–	
11	dblArguments	4.1.7.1.1	m		–	–	
12	SQLDataTypeDescriptor	4.1.7.1.1	c.18		See Table D-43	See Table D-43	
13	singleArgument	4.1.7.1.1	m		–	–	
14	repetitionCount	4.1.7.1.1	d				
15	sQLDBLArgumentValues	4.1.7.1.1	m		–	–	
16	listOfSQLValue	4.1.7.1.1	m		–	–	
17	SQLValue	4.1.7.1.1	m		–	–	
18	dataItem	4.1.7.1.1	m		0-7		
19	indicator	4.1.7.1.1	m				
20	multipleArgument	4.1.7.1.1	o		–	–	
21	listOfSQLDBLArgumentValues	4.1.7.1.1	c.19		–	–	
22	sQLDBLArgumentValues	4.1.7.1.1	c.19		–	–	
23	listOfSQLValue	4.1.7.1.1	c.19		–	–	
24	SQLValue	4.1.7.1.1	c.19		–	–	
25	dataItem	4.1.7.1.1	c.19		0-7		
26	indicator	4.1.7.1.1	c.19				

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Table D-41 — R-ExecuteDBL-RC (Normal Result) APDU

R-ExecuteDBL-RC (Normal Result) Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.1.1	m				
2	sQLDBLResultSpecification	4.1.7.1.1	m		–	–	
3	listOfSQLDataTypeDescriptor	4.1.7.1.1	m		–	–	
4	SQLDataTypeDescriptor	4.1.7.1.1	m		See Table D-44	See Table D-44	
5	listOfResultValues	4.1.7.1.1	m		–	–	
6	resultValues	4.1.7.1.1	m		–	–	
7	sQLDBLException	4.1.7.1.1	m		–	–	
8	sQLSTATE	4.1.7.1.1	c.20				
9	sQLCODE	4.1.7.1.1	c.37				
10	sQLErrorText	4.1.7.1.1	m				
11	sQLDBLResultValues	4.1.7.1.1	m		–	–	
12	listOfSQLValue	4.1.7.1.1	m		–	–	
13	SQLValue	4.1.7.1.1	m		–	–	
14	dataItem	4.1.7.1.1	m		0-7		
15	indicator	4.1.7.1.1	m				

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Table D-42 — R-ExecuteDBL-RC (Error Result) APDU

	R-ExecutDBL-RC (Error Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.1.1	m				
2	badRepetitionCount	4.1.7.1.1	m		–	–	
3	dataResourceHandleNotSpecified	4.1.7.1.1	m		–	–	
4	dataResourceHandleUnknown	4.1.7.1.1	m		–	–	
5	duplicateOperationID	4.1.7.1.1	m		–	–	
6	invalidSequence	4.1.7.1.1	m		–	–	
7	diagnosticInformation	4.1.7.1.1	m		1-7		
8	noDataResourceAvailable	4.1.7.1.1	m		–	–	
9	operationAborted	4.1.7.1.1	m		–	–	
10	errorType	4.1.7.1.1	d		0-1		
11	diagnosticInformation	4.1.7.1.1	m				
12	operationCancelled	4.1.7.1.1	c.16		–	–	
13	serviceNotNegotiated	4.1.7.1.1	m		–	–	
14	transactionRolledBack	4.1.7.1.1	n/a		–	–	
15	hostIdentifierError	4.1.7.1.1	m		–	–	
16	rDATransactionNotOpen	4.1.7.1.1	n/a		–	–	
17	sQLDBLArgumentCountMismatch	4.1.7.1.1	m		–	–	
18	sQLDBLArgumentTypeMismatch	4.1.7.1.1	m		–	–	
19	sQLDBLNoCharSet	4.1.7.1.1	m		–	–	
20	sQLDBLTransactionStatementNotAllowed	4.1.7.1.1	m		–	–	
21	sQLUsageModeViolation	4.1.7.1.1	m		–	–	

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Table D-43 — SQL Data Type Descriptor Argument

SQLDataTypeDescriptor Argument Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	nullable	4.1.7.1.1	d		TRUE/FALSE		
2	colName	4.1.7.1.1	o				
3	characterType	4.1.7.1.1	m		–	–	
4	charSet	4.1.7.1.1	m				
5	length	4.1.7.1.1	m				
6	fixedLengthEncoding	4.1.7.1.1	m		TRUE/FALSE		
7	numericType	4.1.7.1.1	m		–	–	
8	precision	4.1.7.1.1	m				
9	scale	4.1.7.1.1	m				
10	decimalType	4.1.7.1.1	m		–	–	
11	precision	4.1.7.1.1	m				
12	scale	4.1.7.1.1	m				
13	integerType	4.1.7.1.1	m		–	–	
14	precision	4.1.7.1.1	m				
15	precisionBase	4.1.7.1.1	m		0-1		
16	smallIntType	4.1.7.1.1	m		–	–	
17	precision	4.1.7.1.1	m				
18	precisionBase	4.1.7.1.1	m		0-1		
19	floatType	4.1.7.1.1	m		–	–	
20	mantissaPrecision	4.1.7.1.1	m				
21	maxExponent	4.1.7.1.1	m				
22	realType	4.1.7.1.1	m		–	–	
23	mantissaPrecision	4.1.7.1.1	m				
24	maxExponent	4.1.7.1.1	m				
25	doublePrecisionType	4.1.7.1.1	m		–	–	
26	mantissaPrecision	4.1.7.1.1	m				
27	maxExponent	4.1.7.1.1	m				

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Table D-44 — SQL Data Type Descriptor Result

SQLDataTypeDescriptor Result Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	nullable	4.1.7.1.1	d		TRUE/FALSE		
2	colName	4.1.7.1.1	o				
3	characterType	4.1.7.1.1	m		–	–	
4	charSet	4.1.7.1.1	m				
5	length	4.1.7.1.1	m				
6	fixedLengthEncoding	4.1.7.1.1	m		TRUE/FALSE		
7	numericType	4.1.7.1.1	m		–	–	
8	precision	4.1.7.1.1	m				
9	scale	4.1.7.1.1	m				
10	decimalType	4.1.7.1.1	m		–	–	
11	precision	4.1.7.1.1	m				
12	scale	4.1.7.1.1	m				
13	integerType	4.1.7.1.1	m		–	–	
14	precision	4.1.7.1.1	m				
15	precisionBase	4.1.7.1.1	m		0-1		
16	smallIntType	4.1.7.1.1	m		–	–	
17	precision	4.1.7.1.1	m				
18	precisionBase	4.1.7.1.1	m		0-1		
19	floatType	4.1.7.1.1	m		–	–	
20	mantissaPrecision	4.1.7.1.1	m				
21	maxExponent	4.1.7.1.1	m				
22	realType	4.1.7.1.1	m		–	–	
23	mantissaPrecision	4.1.7.1.1	m				
24	maxExponent	4.1.7.1.1	m				
25	doublePrecisionType	4.1.7.1.1	m		–	–	
26	mantissaPrecision	4.1.7.1.1	m				
27	maxExponent	4.1.7.1.1	m				

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D.8 Stored Execution DBL functional unit

D.8.1 APDUs supported

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Table D-45 — APDUs supported in Stored Execution DBL FU

	Stored Execution DBL FU APDU	Ref	Status	Support	Comment
1	R-DefineDBL-RI	4.2.2	m		
2	R-DefineDBL-RC (Normal Result)	4.2.2	m		
3	R-DefineDBL-RC (Error Result)	4.2.2	m		
4	R-InvokeDBL-RI	4.2.2	m		
5	R-InvokeDBL-RC (Normal Result)	4.2.2	m		
6	R-InvokeDBL-RC (Error Result)	4.2.2	m		
7	R-DropDBL-RI	4.2.2	m		
8	R-DropDBL-RC (Normal Result)	4.2.2	m		
9	R-DropDBL-RC (Error Result)	4.2.2	m		

D.8.2 R-DefineDBL APDUs

Table D-46 — R-DefineDBL-RI APDU

	R-DefineDBL-RI Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.2.1	m				
2	commandHandle	4.1.7.2.1	m				
3	dataResourceHandle	4.1.7.2.1	o				
4	sQLDBLStatement	4.1.7.2.1	m		–	–	
5	statementText	4.1.7.2.1	m				
6	charSet	4.1.7.2.1	m				
7	sQLDBLArgumentSpecification	4.1.7.1.1	m		–	–	
8	listOfSQLDataTypeDescriptor	4.1.7.2.1	m		–	–	
9	SQLDataTypeDescriptor	4.1.7.2.1	m		See Table D-43	See Table D-43	
10	sQLDBLResultSpecification	4.1.7.2.1	o		–	–	
11	listOfSQLDataTypeDescriptor	4.1.7.2.1	c.18		–	–	
12	SQLDataTypeDescriptor	4.1.7.2.1	c.18		See Table D-43	See Table D-43	

Table D-47 — R-DefineDBL-RC (Normal Result) APDU

R-DefineDBL-RC (Normal Result) Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.2.1	m				
2	sQLDBLResultSpecification	4.1.7.2.1	m		–	–	
3	listOfSQLDataTypeDescriptor	4.1.7.2.1	m		–	–	
4	SQLDataTypeDescriptor	4.1.7.2.1	m		See Table D-44	See Table D-44	
5	sQLDBLException	4.1.7.2.1	m		–	–	
6	sQLSTATE	4.1.7.2.1	c.20				
7	sQLCODE	4.1.7.2.1	c.37				
8	sQLErrorText	4.1.7.2.1	m				

Table D-48 — R-DefineDBL-RC (Error Result) APDU

R-DefineDBL-RC (Error Result) Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.2.1	m				
2	dataResourceHandleNotSpecified	4.1.7.2.1	m		–	–	
3	dataResourceHandleUnknown	4.1.7.2.1	m		–	–	
4	duplicateCommandHandle	4.1.7.2.1	m		–	–	
5	duplicateOperationID	4.1.7.2.1	m		–	–	
6	invalidSequence	4.1.7.2.1	m		–	–	
7	diagnosticInformation	4.1.7.2.1	m		1-7		
8	noDataResourceAvailable	4.1.7.2.1	m		–	–	
9	operationAborted	4.1.7.2.1	m		–	–	
10	errorType	4.1.7.2.1	d		0-1		
11	diagnosticInformation	4.1.7.2.1	m				
12	operationCancelled	4.1.7.2.1	c.16		–	–	
13	serviceNotNegotiated	4.1.7.2.1	m		–	–	
14	hostIdentifierError	4.1.7.2.1	m		–	–	
15	sQLDBLNoCharSet	4.1.7.2.1	m		–	–	
16	sQLDBLTransactionStatementNotAllowed	4.1.7.2.1	m		–	–	
17	sQLUsageModeViolation	4.1.7.2.1	m		–	–	

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D.8.3 R-InvokeDBL APDUs

Table D-49 — R-InvokeDBL-RI APDU

R-InvokeDBL-RI Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.2.2	m				
2	commandHandle	4.1.7.2.2	m				
3	dblArguments	4.1.7.2.2	m		–	–	
4	singleArgument	4.1.7.2.2	m		–	–	
5	repetitionCount	4.1.7.2.2	d				
6	sQLDBLArgumentValues	4.1.7.2.2	m		–	–	
7	listOfSQLValue	4.1.7.2.2	m		–	–	
8	SQLValue	4.1.7.2.2	m		–	–	
9	dataItem	4.1.7.2.2	m		0-7		
10	indicator	4.1.7.2.2	m				
11	multipleArgument	4.1.7.2.2	o		–	–	
12	listOfSQLDBLArgumentValues	4.1.7.2.2	c.19		–	–	
13	sQLDBLArgumentValues	4.1.7.2.2	c.19		–	–	
14	listOfSQLValue	4.1.7.2.2	c.19		–	–	
15	SQLValue	4.1.7.2.2	c.19		–	–	
16	dataItem	4.1.7.2.2	c.19		0-7		
17	indicator	4.1.7.2.2	c.19				

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Table D-50 — R-InvokeDBL-RC (Normal Result) APDU

R-InvokeDBL-RC (Normal Result) Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.2.2	m				
2	sQLDBLResultSpecification	4.1.7.2.2	m		–	–	
3	listOfSQLDataTypeDescriptor	4.1.7.2.2	m		–	–	
4	SQLDataTypeDescriptor	4.1.7.2.2	m		See Table D-44	See Table D-44	
5	listOfResultValues	4.1.7.2.2	m		–	–	
6	resultValues	4.1.7.2.2	m		–	–	
7	sQLDBLException	4.1.7.2.2	m		–	–	
8	sQLSTATE	4.1.7.2.2	c.20				
9	sQLCODE	4.1.7.2.2	c.37				
10	sQLErrorText	4.1.7.2.2	m				
11	sQLDBLResultValues	4.1.7.2.2	m		–	–	
12	listOfSQLValue	4.1.7.2.2	m		–	–	
13	SQLValue	4.1.7.2.2	m		–	–	
14	dataItem	4.1.7.2.2	m		0-7		
15	indicator	4.1.7.2.2	m				

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Table D-51 — R-InvokeDBL-RC (Error Result) APDU

	R-InvokeDBL-RC (Error Result) Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.2.2	m				
2	badRepetitionCount	4.1.7.2.2	m		–	–	
3	commandHandleUnknown	4.1.7.2.2	m		–	–	
4	duplicateOperationID	4.1.7.2.2	m		–	–	
5	invalidSequence	4.1.7.2.2	m		–	–	
6	diagnosticInformation	4.1.7.2.2	m		1-7		
7	operationAborted	4.1.7.2.2	m		–	–	
8	errorType	4.1.7.2.2	d		0-1		
9	diagnosticInformation	4.1.7.2.2	m				
10	operationCancelled	4.1.7.2.2	c.16		–	–	
11	serviceNotNegotiated	4.1.7.2.2	m		–	–	
12	transactionRolledBack	4.1.7.2.2	n/a		–	–	
13	rDATransactionNotOpen	4.1.7.2.2	n/a		–	–	
14	sQLDBLArgumentCountMismatch	4.1.7.2.2	m		–	–	
15	sQLDBLArgumentTypeMismatch	4.1.7.2.2	m		–	–	
16	sQLUsageModeViolation	4.1.7.2.2	m		–	–	

D.8.4 R-DropDBL APDUs

Table D-52 — R-DropDBL-RI APDU

	R-DropDBL-RI Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.2.3	m				
2	listOfCommandHandle	4.1.7.2.3	m		–	–	
3	commandHandle	4.1.7.2.3	m				

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Table D-53 — R-DropDBL-RC (Normal Result) APDU

R-DropDBL-RC (Normal Result) Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.2.3	m				
2	listOfDropDBLExceptions	4.1.7.2.3	m		–	–	
3	commandHandle	4.1.7.2.3	m				
4	dropDBLException	4.1.7.2.3	m		–	–	
5	commandHandleUnknown	4.1.7.2.3	m		–	–	

Table D-54 — R-DropDBL-RC (Error Result) APDU

R-DropDBL-RC (Error Result) Field Name		Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.7.2.3	m				
2	duplicateOperationID	4.1.7.2.3	m		–	–	
3	invalidSequence	4.1.7.2.3	m		–	–	
4	diagnosticInformation	4.1.7.2.3	m		1-7		
5	operationAborted	4.1.7.2.3	m		–	–	
6	errorType	4.1.7.2.3	d		0-1		
7	diagnosticInformation	4.1.7.2.3	m				
8	operationCancelled	4.1.7.2.3	c.16		–	–	
9	serviceNotNegotiated	4.1.7.2.3	m		–	–	

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Annex E

(normative)

Remote Database Access — SQL Specialization

Protocol Implementation Conformance Statement (PICS) Proforma

Specific Conformance Requirements

for

Server Role in TP Application-Context

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NOTES
1. This Annex should only be completed after completing Annex A.
2. Refer to clause 7 for an explanation of notation used in this Annex.
3. Refer to clauses 8 and A.4 for guidance on completing this Annex.
4. Although certain table headings in Annexes B and C are not relevant to this Annex, parallel table numbering has been maintained in order to facilitate cross-referencing among Annexes B-E.

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E.1 Dialogue Initialization functional unit

E.1.1 APDUs supported

Table E-1 — APDUs supported in Dialogue Initialization FU

	Dialogue Initialization FU APDU	Ref	Status	Support	Comment
1	R-Initialize-RI	4.2.2	m		
2	R-Initialize-RC (Normal Result)	4.2.2	m		
3	R-Initialize-RC (Error Result)	4.2.2	m		

E.1.2 R-Initialize APDUs

Table E-2 — R-Initialize-RI APDU

	R-Initialize-RI Field Name	Ref	Status	Support	Values		Comment
					Allowed	Supported	
1	operationID	4.1.3.1.1	m				
2	dialogueIDSuffix	4.1.3.1.1	m		–	–	
3	ostring	4.1.3.1.1	o.18				
4	identityOfUser	4.1.3.1.1	m		–	–	
5	userAuthenticationData	4.1.3.1.1	o		–	–	
6	cstring	4.1.3.1.1	c.24				
7	ostring	4.1.3.1.1	c.24				
8	bstring	4.1.3.1.1	c.24				
9	controlServiceDataRequested	4.1.3.1.1	d		TRUE/FALSE		
10	functionalUnitsRequested	4.1.3.1.1	m		See Table E-3	See Table E-3	
11	sQLConformanceLevelDefault	4.1.3.1.1	m		See Table E-4	See Table E-4	
12	userData	4.1.3.1.1	o				