

# S@T 01.22 v2.0.0 (Release 2004)

S@T Operational Commands

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## 2 TERMINOLOGY

### 2.1 Notation

Lexical and syntactical specifications are given in EBNF (extended Backus Naur Form), with literals enclosed in single quotes 'xyz' or given in a single character set like [0-9] for a digit, and using the operators (...) (precedence), ? (optional), \* (zero or more times), + (one or more times), | (alternative), and "... ::= ... ." for rules.

### 2.2 Abbreviations

<b>HTTP</b>	Hyper Text Transfer Protocol
<b>S@T</b>	SIM Alliance Toolbox
<b>SBC</b>	S@T Byte Code
<b>SSP</b>	S@T Session Protocol
<b>S@TML</b>	S@T Markup Language
<b>STK</b>	SIM Application Toolkit
<b>STLS</b>	S@T Transport Layer Security
<b>TLV</b>	Tag Length Value encoding
<b>URL</b>	Unified Resource Locator

## 3 LIST OF DOCUMENTS

/SBC/	S@T 01.00 : SBC – S@TML Byte Code
/SSP/	S@T 01.20 : SSP – S@T Session Protocol
/Admin/	S@T 01.21 : S@T Administrative Commands

This document is part of a specification set, please refer to "S@T Release Note" for a comprehensive document list, including document versions.



## 4 OVERVIEW

The SSP specifies generic messages (Get\_Req, Post\_Req, Data\_Req, Express\_Data\_Req, Reply, Connect, Disconnect) and related parameters to be used by a S@T Gateway and Browser.

This document proposes a way to specialize these generic messages to be used by a S@T gateway-browser couple to perform browsing operations.

## 5 DEFINITION OF NEEDS

This document specifies the following operations concerning the communication between browser and gateway.

Information the Browser can send to the gateway:

- Request a deck to browse
- Send a bookmark Message
- Send additional variables (optional)

Information the gateway can send to the browser:

- Response to a request

## 6 GENERIC SIMPLE-TL[A]V FORMAT

Refer to paragraph 4 of /SBC/



# 7 BROWSING COMMANDS

## 7.1 PULL

### 7.1.1 Browser Request

When the browser requests a deck from the gateway, it uses a GET\_REQ message (see /SSP/) depending on the URL attribute flag (see “URL Reference” in /SBC/)

The information needed for request is encapsulated into the value part of the GET\_REQ message as a TL[A]V:

LENGTH	VALUE	DESCRIPTION	M/O														
1	RequestTag	Browser request tag (+ Attribute presence flag)	M														
1-3	L	Length of subsequent data (length coded in BER-TLV)	M														
Optional attributes			O														
1	0xXX	Attribute byte:  <div style="display: flex; align-items: center;"> <div style="margin-right: 5px;">Bit#</div> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">7</td> <td style="width: 20px;">6</td> <td style="width: 20px;">5</td> <td style="width: 20px;">4</td> <td style="width: 20px;">3</td> <td style="width: 20px;">2</td> <td style="width: 20px;">1</td> </tr> <tr> <td style="height: 20px;"></td> <td style="height: 20px;"></td> <td style="height: 20px;"></td> <td style="height: 20px;"></td> <td style="height: 20px;"></td> <td style="height: 20px;"></td> <td style="height: 20px;"></td> </tr> </table> </div> <div style="display: flex; justify-content: center; gap: 20px;"> <div style="text-align: center;">Follow Bit</div> <div style="text-align: center;">GetBookmarkedDeck</div> <div style="text-align: center;">RFU</div> <div style="text-align: center;">RFU</div> <div style="text-align: center;">RFU</div> <div style="text-align: center;">RFU</div> <div style="text-align: center;">RFU</div> </div> <p><b>GetBookmarkedDeck Attribute :</b></p> <p>Default Value : 0: Execute a Get/Post request using the specified address reference.</p> <p>If Set : 1: Execute a Get/Post request using the bookmarked URL stored at the specified index (see section 7.2).</p>	7	6	5	4	3	2	1								
7	6	5	4	3	2	1											
URL Reference element (see [SBC]). This field is present if and only if GetBookmarkedDeck is not set.			O														
1	URLTag	URL Reference tag															
1	X	URL Reference length															
X		URL Reference value.															
URL source (in aim to support the SendReferer attribute of the URL tag). This field is present if GetBookmarkedDeck is not set and SendReferer attribute in the previous URL is set.			O														
1	URLTag	URL Reference tag															



1	Y	URL Reference length	
Y	Value	URL Reference value.	
		Bookmark Index element (see section 7.2). This field is present if and only if GetBookmarkedDeck is set.	O
1	Value	Index in bookmark list	

### 7.1.2 Gateway Response

The gateway response to the browser request is the deck to execute. A REPLY\_RSP message contains in its value part the Deck TL[A]V described in /SBC/.

## 7.2 BOOKMARKS

The support of bookmarks is optional.

The S@T browser handles coded deck names, so that when the user wants to bookmark the current deck, the browser has to store the long deck name for future access.

Two different policies are possible to solve this issue:

1. The browser stores the long URL: it asks the gateway for the long URL and stores it in the SIM. When the user will select the bookmark, the long URL will be used for the Get/Post request.
2. The browser does not store the long URL: it asks the gateway for long/coded URL association storage on the gateway. The stored bookmark is identified by an index in the browser bookmark list. When the user will select the bookmark, the browser will send a request to use the bookmark at the specified index.

The messages proposed here implements the two policies:

1. When the current deck has to be bookmarked, the browser sends a request to the gateway with the coded URL. The gateway responds with the long URL, which can be stored by the browser.
2. When the current deck has to be bookmarked, the browser sends a request to the gateway with the coded URL and the index in the bookmark list. The gateway then stores the association. When the user wants to go to a previously bookmarked deck, the browser sends a Get/Post request with the bookmark index.

The gateway must manage the two modes to ensure interoperability.



## 7.2.1 Browser Request

The bookmark request is encapsulated in the value part of a DATA\_REQ message:

<i>LENGTH</i>	<i>VALUE</i>	<i>DESCRIPTION</i>	<i>M/O</i>
1	BookmarkTag	Bookmark tag (+ Attribute presence flag)	M
1-3	L	Length of subsequent data (length coded in BER-TLV)	M
		URL Reference element (see [SBC])	M
1	URLTag	URL Reference tag	
1	X	URL Reference length	
X		URL Reference value.	
		Index in Browser Bookmark List	O
1	Value	Index	

If the index in browser bookmark list is present, the gateway stores the association.

In any case the following response is sent by the gateway.

## 7.2.2 Gateway Response

The bookmark response is encapsulated in the value part of a DATA\_RSP message:

<i>LENGTH</i>	<i>VALUE</i>	<i>DESCRIPTION</i>	<i>M/O</i>
1	BookmarkTag	Bookmark tag (+ Attribute presence flag)	M
1-3	L	Length of subsequent data (length coded in BER-TLV)	M
		URL Reference element OR Index value (see [SBC])	M
1	URLTag	URL Reference tag	O
1	X	URL Reference length	
X		URL Reference value.	
1	Inline Value Tag	Inline value tag	O
1	1	Length of value	
1		Index value equal to the index sent by the browser	

The 0xFF index value is reserved for gateway error management.



### 7.3 ADDITIONAL INFORMATION

The S@T Browser or S@T Gateway may send additional information just after a Browsing command. This information is not necessary to provide the service but can be used to improve it.

The handling of this additional information is optional.

This information is sent in a EXPRESS\_DATA command. The use of TLV is mandatory. The value of the Tags to be used is described later in this document.





# 8 CONNECTION PROCEDURE FOR A BROWSING SESSION

A Browsing session is initiated by the Browser.

To do so, the S@T Browser sends a CONNECT\_REQ message to the Gateway. The Browser start up information and the browser profile MUST be sent to the Gateway in EXPRESS\_DATA commands just after the CONNECT\_REQ message.

Additional informations may be sent in other EXPRESS\_DATA commands after the Browser startup information.

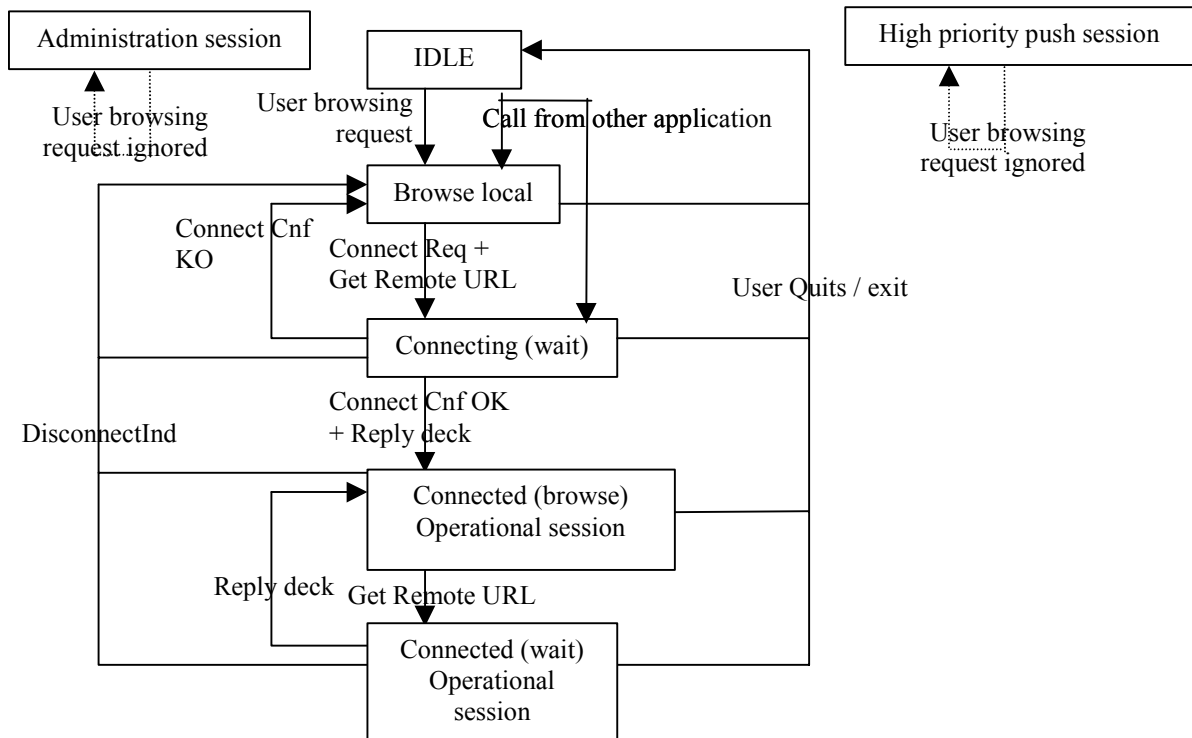
The value of the Protocol ID to be sent in a CONNECT\_REQ message is 01 (S@T Browsing protocol) as defined in /SSP/.

If the browser does not support multiple sessions, a browsing session MUST NOT interrupt a administrative session or a push session.

The diagram below recaps the browser behaviour:

Notes:

- Browse local state means that a deck is currently browsed without any session established with the gateway.
- Connecting (wait) state means that no session is established and a session establishment is requested.
- Connected (browse) state means that a session is established and a deck is currently browsed.
- Connected (wait) state means that a session is established and a deck is requested.
- This diagram is valid if multi session is not supported.





## 9 LIST OF COMMAND TAGS

Since bit 7 is reserved for attribute indication the tag values can be in range [0x00..0x7F]

<b>Command</b>	<b>Value</b>
Request tag	0x40
Bookmark tag	0x41

Unsupported tags must be ignored.



## 10 LIST OF VARIABLE IDENTIFIERS

All the environment variables defined in the /SBC/document are usable in the additional information message, as well as proprietary information. These variables are sent using a TLV format, the value of the variable identifier to use being defined below. T is the ID of a variable defined below, L is the length of its value, V its value.

The following variables are defined only for the browsing protocol.

### 10.1 Browser Start Up Information

The browser start up information provides information to the gateway to adapt to different SIM browser types. The variable content is sent at any initial request to the gateway, i.e. every time, when a browsing session is started.

Variable name: *BrowserInfo*

Access: Read only

Availability: Mandatory

Length: 3

Contents:

Byte 1: *SIMBrowserSupplier*  
(for definition and coding see /SBC/)

Byte 2: *BrowserVersion*  
(for definition and coding see/SBC/)

Byte 3: *ReceptionBufferSize*  
(for definition and coding see /Admin/)

### 10.2 Browser Profile

See /SBC/ document for definition and coding of this field.

### 10.3 Variable Identifiers Coding

Variable	Support	Description	Value
<i>BrowserInfo</i>	Mandatory	Browser start up Information	0x50
<i>RFU</i>	-	Reserved values for this specification	0x51-0x5F

Note:

Outside the scope of this specification the following identifier ranges are defined:



0x00 – 0x3F	SBC Environment Variables Identifiers
0x40 – 0x4F	Administrative Mode Identifiers
0x60 – 0x6F	Administrative Mode Proprietary Identifiers
0x70 – 0x7F	Operational Mode Proprietary Identifiers
0x70 – 0xFF	RFU

## 11 Annex : OPTIONAL FEATURES

The following features are optional :

- bookmarks



## 12 History

<b>Document history</b>		
Release	Approved by	Comment
1.0.0	SIM Alliance TDG	Document S@T 01.70 renamed to 01.22
1.0.1	SIM Alliance TDG	Changes after meeting 18 CRs : 10017, 10042
1.0.2	SIM Alliance TDG	Changes after meeting 18 ad hoc CRs: 10051 and 10031
1.0.3	SIM Alliance TDG	Editorial changes for Release 2000-6
1.0.4	SIM Alliance TDG	Add CRs: 10070, 10074, 10075
1.0.5	SIM Alliance TDG	Add CR 10120
1.0.6	SIM Alliance TDG	Editorial changes at meeting #30 for publication
2.0.0	SIM Alliance TDG	Editorial changes and clarifications (CR 2004-028) for publication



## 12.1 Annex: LIST OF CHANGE REQUESTS [informative]

CR Number	CR Identifier	Subject	Document Reference	Status / Meeting No.
10017	GEMPLUS-WG1-MAY-2000#3	PRECISE DEFINITION TO "TEMPORARY DECK BUFFER SIZE"	S@T 1.21 V1.00	Accepted #17
10031	GEMPLUS-WG1-MAY-2000#18.3	RFU INDICATION AFTER FOLLOW BIT IN ATTRIBUTE FIELD	S@T 1.22 V1.0.1	Accepted #18
10042	GEMPLUS-WG1-MAY-2000#18.7	OPTIONAL / MANDATORY FEATURES	S@T 1.22 V1.0.1	Accepted #18
10051	SLB-WG1-JUNE-2000#19.1	MANDATORY MESSAGE RESPONSE FOR BOOKMARK	S@T 1.22 V1.0.1	Accepted #18a
10070	SCHLUMBERGER-WG1 – AUGUST-2000#14	BOOKMARKS: management of the two modes	S@T 01.22 V1.0.3	Accepted #20
10074	SCHLUMBERGER –WG1 – AUGUST 2000#12	PULL: Browser Request (Same as 10068 which has been accepted with editorial changes. Changes appear in 10074)	S@T 01.22 V1.0.3	Accepted #25
10075	SCHLUMBERGER –WG1 – AUGUST 2000#15	BOOKMARKS: Gateway response (Same as 10071 but now with impact to WG2. No content changes)	S@T 01.22 V1.0.3	Accepted #25
10120	GEMPLUS-WG1-MAY-2001#28-3	Proposal for state diagrams in 1.21/1.22/1.23	S@T 01.22 V1.0.4	Accepted #29
2004-028	CRG&D06_01.22_Browse_7.1.1-S@T_Specs2003	A POST_REQUEST cannot request a deck from gateway	S@T 1.21 V2.0.0	Accepted (email vote 9 <sup>th</sup> March 2004)