

SIPPING Working Group
Internet Draft

Miguel Garcia
Ericsson
Carsten Bormann
Joerg Ott
TZI/Uni Bremen
Richard Price
Siemens/Roke Manor
Adam Roach
dynamicsoft

Expires: November 2002

May 2002

The SIP/SDP static dictionary for Signaling Compression
<[draft-ietf-sipping-sigcomp-sip-dictionary-00.txt](#)>

Status of this memo

This document is an Internet-Draft and is in full conformance with all provisions of [Section 10 of RFC2026](#).

Internet-Drafts are working documents of the Internet Engineering Task Force (IETF), its areas, and its working groups. Note that other groups may also distribute working documents as Internet-Drafts.

Internet-Drafts are draft documents valid for a maximum of six months and may be updated, replaced, or obsoleted by other documents at any time. It is inappropriate to use Internet-Drafts as reference material or cite them other than as "work in progress".

The list of current Internet-Drafts can be accessed at
<http://www.ietf.org/ietf/lid-abstracts.txt>

The list of Internet-Draft Shadow Directories can be accessed at
<http://www.ietf.org/shadow.html>

This document is an individual submission to the IETF. Comments should be directed to the authors.

Abstract

The Session Initiation Protocol (SIP) [2] is a text-based protocol for initiating and managing communication sessions. The protocol can be compressed by using Signaling Compression (SigComp) [1]. Similarly,

the Session Description Protocol (SDP) [24] is a text-based protocol intended for describing multimedia sessions for the purposes of

session announcement, session invitation, and other forms of multimedia session initiation. This memo defines a SIP/SDP-specific static dictionary that SigComp can use in order to achieve higher efficiency. The dictionary is compression algorithm independent.

Table of contents

1. Introduction.....	2
3. The SIP static dictionary for Signaling Compression (SigComp).....	4
4. The SDP static dictionary for Signaling Compression (SigComp)....	12
5. Binary representation of the SIP/SDP dictionary.....	13
6. Security Considerations.....	18
7. IANA Considerations.....	18
8. Author's Addresses.....	18
9. Acknowledgements.....	19
10. References.....	19
10.1 Normative references.....	19
10.2 Informative references.....	19

[1. Introduction](#)

SIP [2] and SDP [24] are text-based protocols that use the UTF-8 charset ([RFC 2279](#) [4]). SIP and SDP were designed for rich bandwidth links. However, when SIP/SDP is run over narrow bandwidth links, such as radio interfaces or low speed serial links, the session setup time increases substantially, compared to an operation over a rich bandwidth link.

The session setup time can decrease dramatically if the SIP/SDP signaling is compressed. The signaling compression mechanisms specified in SigComp [1] provide a multiple compression/decompression algorithm framework to compress and decompress text-based protocols such as SIP and SDP.

When compression is used in SIP/SDP, the compression achieves its maximum rate once a few message exchanges have taken place. This is due to the fact that the first message the compressor sends to the decompressor is only partially compressed, as there is not a previous stored state to compress against. As the goal is to reduce the session setup time as much as possible, it seems sensitive to investigate a mechanism to boost the compression rate from the first message.

In this memo we introduce a static dictionary for SIP and SDP. The

dictionary is to be used in conjunction with SIP, SDP and SigComp. The static SIP/SDP dictionary constitutes a SigComp state that can be used to refer compression states in the first SIP message that the compressor sends out.

2. Design considerations

The static SIP/SDP dictionary is a collection of well-known strings that appear in most of the SIP and SDP messages. The dictionary is not a comprehensive list of reserved words, but it includes most of the strings that appear in SIP and SDP signaling.

The dictionary is unique. It is not going to evolve as SIP or SDP evolve. It is defined once, and stays as is forever. This solves the problems of updating, upgrading and finding out the dictionary that is supported at the remote end when several versions of the same dictionary coexist.

[Section 3](#) defines the collection of strings that are part of the SIP static dictionary. It contains references to the documents that define those strings.

[Section 4](#) defines the collection of strings that are part of the SDP static dictionary. It contains references to the documents that define those strings.

[Section 5](#) is the binary form of the SIP/SDP dictionary. This is the dictionary that is included the SigComp implementation. This dictionary is formed upon the collection of individual dictionaries in sections [3](#) and [4](#).

The dictionary is a collection of UTF-8 encoded character strings. In order to facilitate the readability, we describe the dictionary in a table.

Each row in the dictionary represents an entry. Each entry contains the string in the dictionary, its priority, its numerical ascendant position, its offset from the first octet, and a reference.

The columns are described as follows:

String: represents the UTF-8 string that is inserted into the dictionary. Note that the quotes (") are not part of the string itself. Note also that the notation [CRLF] represents a Carriage Return character (ASCII code 0x0D) followed by a Line Feed character (ASCII code 0x0A).

Pr: indicates the priority of this string within the dictionary. Lower priorities indicate higher probability of the string to appear in most messages. The string is given a prioritized position within the dictionary. Higher priority numbers indicate lower probability of the string to appear in a message. The string is given a non-prioritized position within the dictionary.

Off: indicates the hexadecimal offset of the entry with respect the first octet in the dictionary.

Len: the length of the string (in hexadecimal).

References: contains a reference to the RFC and the section within the RFC where the string is defined.

Note that the strings stored in the dictionary are case sensitive. The strings do not comprise the quotes ("), they are just shown here to increase the readability. Where there string is a header field, it also comprises the colon ":" and a white space. Note that this is a restriction against the SIP Augmented BNF, that allows other combinations (e.g., a white space or horizontal tabulator before the colon (":") sign).

Some strings appear followed by an equal sign and some other not. This depends on whether the string is part of a parameter name or a parameter value.

In a SIP message, all the SIP header fields terminate with a CRLF pair characters. As these characters are appended to the end of each SIP header line, right after the header values, and because the header values are typically not part of the static SIP dictionary, we cannot include the terminating CRLF, as part of the SIP static dictionary. Instead, the approach we have taken is to include in each header field entry the CRLF from the previous line that prepends every header field. We have represented CRLF by the notation [CRLF]. Therefore, an entry in the dictionary represented as: "[CRLF]From: " SHALL be interpreted as an entry whose value is CR, LF, the word From, a colon and a whitespace.

SIP responses are composed of a status code (e.g., "302") and a reason phrase (e.g., "Moved Temporarily"). The status code is a normative part, whereas the reason phrase is not normative, it is just a suggested text. Therefore, both "302 Moved Temporarily" and "302 Redirect" are valid SIP responses.

In the SIP dictionary we have included two entries per response code, one including only the status code an a white space (e.g. "302 ") and

another one including both the status code and the suggested reason phrase (e.g., "302 Moved Temporarily"). The former can be used when the SIP response changed the suggested reason phrase by another one. The later can be used when the suggested reason phrase is part of the response. In this way, we accommodate both alternatives.

3. The SIP static dictionary for Signaling Compression (SigComp)

String	Pr	Off	Len	References
=====	==	====	====	=====
"sip:"	1	0DEB	0004	[2] 19.1.1
"sips:"	3	0B9B	0005	[2] 19.1.1
"tel:"	3	0998	0004	[6] 2.2
"SIP/2.0"	1	0DC6	0007	[2] 25.1
"INVITE"	1	0DEF	0006	[2] 25.1
"INVITE "	1	0DEF	0007	[2] 25.1
"ACK"	2	0C8C	0003	[2] 25.1

SIPPING Working Group

Expiration 11/30/02

Page 4

Garcia et. al. The static SIP/SDP dictionary for SigComp

May 2002

"ACK "	2	0C8C	0004	[2] 25.1
"OPTIONS"	4	033D	0007	[2] 25.1
"OPTIONS "	4	033D	0008	[2] 25.1
"BYE"	2	0D62	0003	[2] 25.1
"BYE "	2	0D62	0004	[2] 25.1
"CANCEL"	4	072A	0006	[2] 25.1
"CANCEL "	4	072A	0007	[2] 25.1
"REGISTER"	2	0C13	0008	[2] 25.1
"REGISTER "	2	0C13	0009	[2] 25.1
"INFO"	4	083D	0004	[7] 2
"INFO "	4	083D	0005	[7] 2
"SUBSCRIBE"	2	0AC8	0009	[8] 8.1.1
"SUBSCRIBE "	2	0AC8	000A	[8] 8.1.1
"NOTIFY"	2	0CD0	0006	[8] 8.1.2
"NOTIFY "	2	0CD0	0007	[8] 8.1.2
"PRACK"	2	0C8A	0005	[9] 6
"PRACK "	2	0C8A	0006	[9] 6
"UPDATE"	2	0CD7	0006	[10] 7, 10
"UPDATE "	2	0CD7	0007	[10] 7, 10
"REFER"	4	07BB	0005	[12] 3, 10
"REFER "	4	07BB	0006	[12] 3, 10
"MESSAGE"	4	06A6	0007	[20] 9
"MESSAGE "	4	06A6	0008	[20] 9
"[CRLF]Accept: "	4	0815	000A	[2] 20.1
"[CRLF]Accept-Contact: "	5	0012	0012	[22] 5
"[CRLF]Accept-Encoding: "	4	0602	0013	[2] 20.2
"[CRLF]Accept-Language: "	4	0345	0013	[2] 20.3
"[CRLF]Alert-Info: "	4	06F4	000E	[2] 20.4
"[CRLF]Allow: "	3	0A1B	0009	[2] 20.5

"[CRLF]Allow-Events: "	3	09D2	0010	[8]	8.2.1
"[CRLF]Authentication-Info: "	4	03B0	0017	[2]	20.6
"[CRLF]Authorization: "	2	0C51	0011	[2]	20.7
"[CRLF]Call-ID: "	1	0E01	000B	[2]	20.8
"[CRLF]Call-Info: "	5	0052	000D	[2]	20.9
"[CRLF]Contact: "	1	0DF6	000B	[2]	20.10
"[CRLF]Content-Disposition: "	4	035F	0017	[2]	20.11
"[CRLF]Content-Encoding: "	4	04A6	0014	[2]	20.12
"[CRLF]Content-Language: "	4	04BE	0014	[2]	20.13
"[CRLF]Content-Length: "	2	0C3B	0012	[2]	20.14
"[CRLF]Content-Type: "	2	0C6F	0010	[2]	20.15
"[CRLF]CSeq: "	1	0E12	0008	[2]	20.16
"[CRLF]Date: "	4	087E	0008	[2]	20.17
"[CRLF]Error-Info: "	5	0044	000E	[2]	20.18
"[CRLF]Event: "	3	09EE	000C	[8]	8.2.1
"[CRLF]Expires: "	2	0D01	000B	[2]	20.19
"[CRLF]From: "	1	0E1A	0008	[2]	20.20
"[CRLF]In-Reply-To: "	4	06DB	000F	[2]	20.21
"[CRLF]Max-Forwards: "	1	0DD3	0010	[2]	20.22
"[CRLF]Min-Expires: "	4	06AE	000F	[2]	20.23
"[CRLF]Min-SE: "	4	080B	000A	[17]	5
"[CRLF]MIME-Version: "	5	0034	0010	[2]	20.24
"[CRLF]Organization: "	5	0024	0010	[2]	20.25

"[CRLF]Path: "	3	0A24	0008	[15]	3
"[CRLF]Priority: "	4	075E	000C	[2]	20.26
"[CRLF]Proxy-Authenticate: "	4	040E	0016	[2]	20.27
"[CRLF]Proxy-Authorization: "	4	0395	0017	[2]	20.28
"[CRLF]Proxy-Require: "	4	0653	0011	[2]	20.29
"[CRLF]P-Media-Authorization: "	3	0B3F	0019	[21]	5.1, 9
"[CRLF]RAck: "	2	0D4C	0008	[9]	7.2
"[CRLF]Reason: "	3	0A11	000A	[16]	2
"[CRLF]Record-Route: "	3	09C2	0010	[2]	20.30
"[CRLF]Refer-To: "	4	07A6	000C	[12]	3, 10
"[CRLF]Reject-Contact: "	5	0000	0012	[22]	5
"[CRLF]Replaces: "	4	079A	000C	[13]	3.1
"[CRLF]Reply-To: "	5	006C	000C	[2]	20.31
"[CRLF]Request-Disposition: "	4	037A	0017	[22]	5
"[CRLF]Require: "	2	0CEB	000B	[2]	20.32
"[CRLF]Retry-After: "	4	06BD	000F	[2]	20.33
"[CRLF]Route: "	2	0D29	0009	[2]	20.34
"[CRLF]RSeq: "	2	0D54	0008	[9]	7.1
"[CRLF]Security-Mechanism: "	2	0BA0	0016	[19]	6.4
"[CRLF]Server: "	4	07ED	000A	[2]	20.35
"[CRLF]Session-Expires: "	3	0973	0013	[17]	4
"[CRLF]Subject: "	5	0078	000B	[2]	20.36
"[CRLF]Subscription-State: "	3	0946	0016	[8]	8.2.3

"[CRLF]Supported: "	2	0CDE	000D	[2]	20.37
"[CRLF]Timestamp: "	5	005F	000D	[2]	20.38
"[CRLF]To: "	1	0E29	0006	[2]	20.39
"[CRLF]Unsupported: "	4	06CC	000F	[2]	20.40
"[CRLF]User-Agent: "	4	0710	000E	[2]	20.41
"[CRLF]Via: "	1	0E22	0007	[2]	20.42
"[CRLF]Warning: "	5	0083	000B	[2]	20.43
"[CRLF]WWW-Authenticate: "	2	0BE3	0014	[2]	20.44
"[CRLF][CRLF]"	2	0B3D	0004	[2]	7
";transport="	4	07C1	000B	[2]	25.1
"udp"	4	0675	0003	[2]	25.1
"tcp"	4	09B0	0003	[2]	25.1
"sctp"	4	02FE	0004	[2]	25.1
"tls"	4	05BA	0003	[2]	25.1
";user="	3	0A2C	0006	[2]	25.1
"phone"	3	0185	0005	[2]	25.1
"ip"	4	015F	0002	[2]	25.1
";method="	4	0876	0008	[2]	25.1
";ttl="	4	08B9	0005	[2]	25.1
";lr"	2	0CA6	0003	[2]	25.1
"Digest "	2	0D66	0007	[5]	3.2.1, 3.2.2
"username="	2	0BC5	0009	[5]	3.2.2
"uri="	2	0D7A	0004	[5]	3.2.2
"qop="	2	0D7E	0004	[5]	3.2.1, 3.2.2
"cnonce="	2	0D6D	0007	[5]	3.2.2
"nc="	2	0D5F	0003	[5]	3.2.2
"response="	2	0AE8	0009	[5]	3.2.2
"nextnonce="	2	0B7E	000A	[5]	3.2.3
"rspauth="	2	0A9E	0008	[5]	3.2.3

"realm="	2	0CAC	0006	[5]	3.2.1
"domain="	2	0AC1	0007	[5]	3.2.1
"nonce="	2	0B82	0006	[5]	3.2.1
"opaque="	4	08A6	0007	[5]	3.2.1
"stale="	4	01FB	0006	[5]	3.2.1
"true"	4	0572	0004	[5]	3.2.1, [22] 5.2
"false"	4	0BCE	0005	[5]	3.2.1
"algorithm="	2	0BD9	000A	[5]	3.2.1, [18] 3.1
"MD5"	2	0C03	0003	[5]	3.2.1, [18] 3.1
"MD5-sess"	2	0C03	0008	[5]	3.2.1, [18] 3.1
"auth"	4	0455	0004	[5]	3.2.1
"auth-int"	4	0455	0008	[5]	3.2.1
"AKAv"	2	0CB2	0004	[18]	6
"auts="	4	08B4	0005	[18]	3.1
"to="	3	09BF	0003	[19]	6.4
"from="	3	0A32	0005	[19]	6.4
"mech="	3	0A37	0005	[19]	6.4

"digest"	4	031E	0006	[19]	6.4
"ipsec-ike"	4	07B2	0009	[19]	6.4
"ipsec-man"	4	0B10	0009	[19]	6.4
"smime"	4	02C7	0005	[19]	6.4
"pref="	4	0C6A	0005	[19]	6.4
"alg="	4	026B	0004	[19]	6.4
";purpose="	5	00B6	0009	[2]	20.9
"icon"	5	0D5C	0004	[2]	20.9, 20.11
"info"	5	0C4D	0004	[2]	20.9
"card"	5	0112	0004	[2]	20.9
";expires="	2	0D32	0009	[2]	25.1, [8] 8.4
"render"	5	0A99	0006	[2]	20.11
"session"	5	0C07	0007	[2]	20.11
"alert"	5	0C36	0005	[2]	20.11
";handling="	5	00A2	000A	[2]	20.11
"optional"	2	0C30	0008	[2]	20.11
"required"	5	096B	0008	[2]	20.11
"text"	5	096B	0008	[2]	25.1
"image"	5	0108	0005	[2]	25.1
"audio"	5	0C2C	0005	[2]	25.1
"video"	5	0A73	0005	[2]	25.1
"application"	2	05C1	000B	[2]	25.1
"message"	4	02CA	0007	[2]	25.1,
				[14]	1, 2
"sip"	4	01AD	0003	[14]	1
"sipfrag"	4	01AD	0007	[14]	2
"multipart"	4	067C	0009	[2]	25.1, 7.4.1
"sdp"	2	077A	0003		
"xml"	2	0D90	0003		
"Mon, "	4	08C8	0005	[2]	25.1
"Tue, "	4	08CD	0005	[2]	25.1
"Wed, "	4	08BE	0005	[2]	25.1
"Thu, "	4	035A	0005	[2]	25.1
"Fri, "	4	08D2	0005	[2]	25.1
"Sat, "	4	08C3	0005	[2]	25.1

"Sun, "	4	0871	0005	[2]	25.1
" Jan "	4	0985	0005	[2]	25.1
" Feb "	4	04B9	0005	[2]	25.1
" Mar "	4	04D1	0005	[2]	25.1
" Apr "	4	0BF6	0005	[2]	25.1
" May "	4	0423	0005	[2]	25.1
" Jun "	4	0BB5	0005	[2]	25.1
" Jul "	4	095B	0005	[2]	25.1
" Aug "	4	03C6	0005	[2]	25.1
" Sep "	4	0375	0005	[2]	25.1
" Oct "	4	03AB	0005	[2]	25.1

" Nov "	4	0390	0005	[2]	25.1
" Dec "	4	0B57	0005	[2]	25.1
" GMT"	4	0357	0004	[2]	25.1
";tag="	1	0E2F	0005	[2]	25.1
"emergency"	4	02AB	0009	[2]	20.26
"urgent"	4	0DB1	0006	[2]	20.26
"normal"	4	0724	0006	[2]	20.26
"non-urgent"	4	0DAD	000A	[2]	20.26
";duration="	4	0829	000A	[2]	20.33
";maddr="	4	08AD	0007	[2]	20.42
";received="	4	081F	000A	[2]	20.42
";branch="	5	0DB7	0008	[2]	20.42
";branch="	1	0DB7	000F	[2]	20.42
"z9hG4bK"	5	0DBF	0007	[2]	8.1.1.7
"SIP"	5	0DC6	0003	[2]	25.1, [16] 2
"UDP"	2	0D8A	0003	[2]	20.42
"TCP"	2	0D93	0003	[2]	20.42
"TLS"	4	086F	0003	[2]	20.42
"SCTP"	4	0C87	0004	[2]	20.42
"active"	4	09A2	0006	[8]	8.4
"pending"	4	0336	0007	[8]	8.4
"terminated"	4	0B6B	000A	[8]	8.4
";reason="	4	089E	0008	[8]	8.4
";retry-after="	4	0731	000D	[8]	8.4
"deactivated"	4	0289	000B	[8]	8.4
"probation"	4	0136	0009	[8]	8.4
"rejected"	4	090A	0008	[8]	8.4
"timeout"	4	0684	0007	[8]	8.4
"giveup"	4	0131	0006	[8]	8.4
"noresource"	4	03D7	000A	[8]	8.4
";id="	4	08EF	0004	[8]	8.4
"100rel"	2	0D74	0006	[9]	8.1
"precondition"	2	0DA2	000C	[11]	8
"refer"	3	0CA8	0005	[12]	10
"to-tag"	4	04FD	0006	[13]	3.2
"from-tag"	4	02E6	0008	[13]	3.2
"replaces"	4	01A6	0008	[13]	3.4
"Q.850"	5	0AA6	0005	[16]	2
";cause="	5	00EF	0007	[16]	2
";text="	5	00FC	0006	[16]	2
"path"	3	0B5C	0004	[15]	3

";refresher="	4	07E2	000B	[17]	4
"uac"	4	0753	0003	[17]	4
"uas"	4	08F6	0003	[17]	4
"timer"	4	0A95	0005	[17]	7.1
";class="	5	00E8	0007	[22]	5.1

"duplex="	5	00D1	0008	[22]	5.1
"feature="	5	00C8	0009	[22]	5.1
"language="	5	00AC	000A	[22]	5.1
"media="	5	00E1	0007	[22]	5.1
"mobility="	5	008E	000A	[22]	5.1
"fixed"	5	010D	0005	[22]	5.1
"mobile"	5	0102	0006	[22]	5.1
"personal"	5	0265	0008	[22]	5.1
"business"	5	0C62	0008	[22]	5.1
"full"	5	0116	0004	[22]	5.1
"half"	5	0B5F	0004	[22]	5.1
"receive-only"	5	0241	000C	[22]	5.1
"send-only"	5	0A5F	0009	[22]	5.1
"voice-mail"	5	0CB5	000A	[22]	5.1
"attendant"	5	09A8	0009	[22]	5.1
"priority="	5	0098	000A	[22]	5.1
"description"	5	015A	000B	[22]	5.1
"methods="	5	00BF	0009	[22]	5.1
"scheme="	5	00D9	0008	[22]	5.2
"only="	5	00F6	0006	[22]	5.2
"q="	4	08F3	0003	[2]	25.1, [22] 5.2
"proxy"	5	0677	0005	[22]	5.5
"redirect"	5	01D2	0008	[22]	5.5
"cancel"	5	0167	0006	[22]	5.5
"no-cancel"	5	0164	0009	[22]	5.5
"fork"	5	0141	0004	[22]	5.5
"no-fork"	5	013E	0007	[22]	5.5
"recurse"	5	0A5A	0007	[22]	5.5
"non-recurse"	5	0A56	000B	[22]	5.5
"parallel"	5	0301	0008	[22]	5.5
"sequential"	5	0BD1	000A	[22]	5.5
"queue"	5	0BFE	0005	[22]	5.5
"no-queue"	5	0BFB	0008	[22]	5.5
"comp=sigcomp"	1	0D96	000D	[23]	6
"100 "	5	0CBF	0004	[2]	21.1.1
"100 Trying"	2	0CBF	000A	[2]	21.1.1
"180 "	5	0C9B	0004	[2]	21.1.2
"180 Ringing"	2	0C9B	000B	[2]	21.1.2
"181 "	5	026F	0004	[2]	21.1.3
"181 Call Is Being Forwarded"	4	026F	001B	[2]	21.1.3
"182 "	5	06EA	0004	[2]	21.1.4
"182 Queued"	4	06EA	000A	[2]	21.1.4
"183 "	5	0B88	0004	[2]	21.1.5
"183 Session Progress"	2	0B88	0014	[2]	21.1.5
"200 "	5	0E0C	0004	[2]	21.2.1
"200 OK"	1	0E0C	0006	[2]	21.2.1
"202 "	5	093A	0004	[8]	8.3.1

"202 Accepted"	3	093A	000C	[8]	8.3.1
"300 "	5	02B4	0004	[2]	21.3.1
"300 Multiple Choices"	4	02B4	0014	[2]	21.3.1
"301 "	5	04D6	0004	[2]	21.3.2
"301 Moved Permanently"	4	04D6	0015	[2]	21.3.2
"302 "	5	0491	0004	[2]	21.3.3
"302 Moved Temporarily"	4	0491	0015	[2]	21.3.3
"305 "	5	0639	0004	[2]	21.3.4
"305 Use Proxy"	4	0639	000D	[2]	21.3.4
"380 "	5	0428	0004	[2]	21.3.5
"380 Alternative Service"	4	0428	0017	[2]	21.3.5
"400 "	5	098A	0004	[2]	21.4.1
"400 Bad Request"	4	098A	000F	[2]	21.4.1
"401 "	5	0C1C	0004	[2]	21.4.2
"401 Unauthorized"	2	0C1C	0010	[2]	21.4.2
"402 "	5	0503	0004	[2]	21.4.3
"402 Payment Required"	4	0503	0014	[2]	21.4.3
"403 "	5	03CB	0004	[2]	21.4.4
"403 Forbidden"	4	03CB	000D	[2]	21.4.4
"404 "	5	0646	0004	[2]	21.4.5
"404 Not Found"	4	0646	000D	[2]	21.4.5
"405 "	5	043F	0004	[2]	21.4.6
"405 Method Not Allowed"	4	043F	0016	[2]	21.4.6
"406 "	5	0576	0004	[2]	21.4.7
"406 Not Acceptable"	4	0576	0012	[2]	21.4.7
"407 "	5	01B4	0004	[2]	21.4.8
"407 Proxy Authentication Required"	4	01B4	0021	[2]	21.4.8
"408 "	5	03E1	0004	[2]	21.4.9
"408 Request Timeout"	4	03E1	0013	[2]	21.4.9
"410 "	5	074B	0004	[2]	21.4.10
"410 Gone"	4	074B	0008	[2]	21.4.10
"413 "	5	0B1F	0004	[2]	21.4.11
"413 Request Entity Too Large"	4	0B1F	001C	[2]	21.4.11
"414 "	5	011A	0004	[2]	21.4.12
"414 Request-URI Too Long"	4	011A	0018	[2]	21.4.12
"415 "	5	024D	0004	[2]	21.4.13
"415 Unsupported Media Type"	4	024D	001A	[2]	21.4.13
"416 "	5	0294	0004	[2]	21.4.14
"416 Unsupported URI Scheme"	4	0294	001A	[2]	21.4.14
"420 "	5	0A46	0004	[2]	21.4.15
"420 Bad Extension"	4	0A46	0011	[2]	21.4.15
"421 "	5	0145	0004	[2]	21.4.16
"421 Extension Required"	4	0145	0016	[2]	21.4.16
"422 "	5	0AF1	0004	[17]	6
"422 Session Timer Too Small"	4	0AF1	001B	[17]	6
"423 "	5	02D1	0004	[2]	21.4.17
"423 Interval Too Brief"	4	02D1	0016	[2]	21.4.17
"480 "	5	0912	0004	[2]	21.4.18
"480 Temporarily Unavailable"	3	0912	001B	[2]	21.4.18
"481 "	5	01DA	0004	[2]	21.4.19

"481 Call/Transaction Does Not Exist"	4	01DA	0023	[2]	21.4.19
"482 "	5	0588	0004	[2]	21.4.20

"482 Loop Detected"	4	0588	0011	[2]	21.4.20
"483 "	5	02EE	0004	[2]	21.4.21
"483 Too Many Hops"	4	02EE	0011	[2]	21.4.21
"484 "	5	016D	0004	[2]	21.4.22
"484 Address Incomplete"	4	016D	0016	[2]	21.4.22
"485 "	5	0BBA	0004	[2]	21.4.23
"485 Ambiguous"	4	0BBA	000D	[2]	21.4.23
"486 "	5	0960	0004	[2]	21.4.24
"486 Busy Here"	3	0960	000D	[2]	21.4.24
"487 "	5	0309	0004	[2]	21.4.25
"487 Request Terminated"	4	0309	0016	[2]	21.4.25
"488 "	5	0191	0004	[2]	21.4.26
"488 Not Acceptable Here"	4	0191	0017	[2]	21.4.26
"489 "	5	05AE	0004	[8]	8.3.2
"489 Bad Event"	4	05AE	000D	[8]	8.3.2
"491 "	5	052A	0004	[2]	21.4.27
"491 Request Pending"	4	052A	0013	[2]	21.4.27
"493 "	5	054F	0004	[2]	21.4.28
"493 Undecipherable"	4	054F	0012	[2]	21.4.28
"500 "	5	0201	0004	[2]	21.5.1
"500 Server Internal Error"	4	0201	0019	[2]	21.5.1
"501 "	5	0517	0004	[2]	21.5.2
"501 Not Implemented"	4	0517	0013	[2]	21.5.2
"502 "	5	05CD	0004	[2]	21.5.3
"502 Bad Gateway"	4	05CD	000F	[2]	21.5.3
"503 "	5	03F7	0004	[2]	21.5.4
"503 Service Unavailable"	4	03F7	0017	[2]	21.5.4
"504 "	5	0A83	0004	[2]	21.5.5
"504 Server Time-out"	4	0A83	0013	[2]	21.5.5
"505 "	5	0AA9	0004	[2]	21.5.6
"505 Version Not Supported"	4	0AA9	0019	[2]	21.5.6
"513 "	5	0467	0004	[2]	21.5.7
"513 Message Too Large"	4	0467	0015	[2]	21.5.7
"580 "	5	0AD2	0004	[11]	8
"580 Precondition Failure"	4	0AD2	0018	[11]	8
"600 "	5	08F9	0004	[2]	21.6.1
"600 Busy Everywhere"	3	08F9	0013	[2]	21.6.1
"603 "	5	0B75	0004	[2]	21.6.2
"603 Decline"	4	0B75	000B	[2]	21.6.2
"604 "	5	0228	0004	[2]	21.6.3
"604 Does Not Exist Anywhere"	4	0228	001B	[2]	21.6.3
"606 "	5	053D	0004	[2]	21.6.4
"606 Not Acceptable"	4	053D	0012	[2]	21.6.4
"687 "	5	047C	0004	[13]	3.5

"687 Dialog Terminated"	4 047C 0015 [13] 3.5
"Anonymous"	3 0DE3 0009 [2] 8.1.1.3

4. The SDP static dictionary for Signaling Compression (SigComp)

String	Pr	Off	Len	References
=====	==	====	====	=====
"v=0[CRLF]o="	2	0CC9	0007	[24] 6
"[CRLF]s="	2	0D86	0004	[24] 6
"[CRLF]i="	4	08EB	0004	[24] 6
"[CRLF]u="	4	08E7	0004	[24] 6
"[CRLF]e="	4	08E3	0004	[24] 6
"[CRLF]c=IN IP4 "	3	0A06	000B	[24] 6
"[CRLF]c=IN IP6 "	2	0C90	000B	[24] 6
"[CRLF]c="	5	0A06	0004	[24] 6
"[CRLF]b="	3	0A3C	0004	[24] 6
"[CRLF]t="	2	0D82	0004	[24] 6
"[CRLF]r="	4	08DF	0004	[24] 6
"[CRLF]z="	4	08DB	0004	[24] 6
"[CRLF]k=clear:"	4	07F7	000A	[24] 6
"[CRLF]k=base64:"	4	07D7	000B	[24] 6
"[CRLF]k=uri:"	4	0896	0008	[24] 6
"[CRLF]k=prompt:"	4	069B	000B	[24] 6
"[CRLF]k="	5	069B	0004	[24] 6
"[CRLF]a=cat:"	4	088E	0008	[24] 6
"[CRLF]a=keywds:"	4	07CC	000B	[24] 6
"[CRLF]a=tool:"	4	0854	0009	[24] 6
"[CRLF]a=ptime:"	4	0801	000A	[24] 6
"[CRLF]a=maxptime:"	4	073E	000D	[24] 6
"[CRLF]a=rtpmap:"	2	0CF6	000B	[24] 6
"[CRLF]a=recvonly"	3	09FA	000C	[24] 6
"[CRLF]a=sendrecv"	3	0A68	000C	[24] 6
"[CRLF]a=sendonly"	3	09E2	000C	[24] 6
"[CRLF]a=inactive"	3	099C	000C	[24] 6
"[CRLF]a=orient:portrait"	4	04EB	0013	[24] 6
"[CRLF]a=orient:landscape"	4	0324	0014	[24] 6
"[CRLF]a=orient:seascape"	4	05EF	0013	[24] 6
"[CRLF]a=type:broadcast"	4	0561	0012	[24] 6
"[CRLF]a=type:meeting"	4	068B	0010	[24] 6
"[CRLF]a=type:moderated"	4	0627	0012	[24] 6
"[CRLF]a=type:test"	4	09B3	000D	[24] 6
"[CRLF]a=type:H.332"	4	092D	000E	[24] 6

"[CRLF]a=type:recvonly"	4	0664	0011	[24]	6
"[CRLF]a=charset:"	4	076A	000C	[24]	6
"[CRLF]a=sdplang:"	4	0776	000C	[24]	6
"[CRLF]a=lang:"	4	084B	0009	[24]	6
"[CRLF]a=framerate:"	4	0702	000E	[24]	6
"[CRLF]a=quality:"	4	0782	000C	[24]	6
"[CRLF]a=fmtp:"	4	0842	0009	[24]	6
"[CRLF]a=curr:"	2	0D3B	0009	[11]	4
"[CRLF]a=des:"	2	0D44	0008	[11]	4
"[CRLF]a=conf:"	2	0D20	0009	[11]	4
"[CRLF]a=mid:"	4	0886	0008	[29]	3
"[CRLF]a=group:"	4	0833	000A	[29]	3
"[CRLF]a=key-mgmt:MIKEY"	4	0615	0012	[31]	2.1, [32] 6

SIPPING Working Group Expiration 11/30/02 Page 12

Garcia et. al. The static SIP/SDP dictionary for SigComp May 2002

"[CRLF]a="	5	0324	0004	[24]	6
"[CRLF]m=audio "	2	0D0C	000A	[24]	6
"[CRLF]m=video "	2	0D16	000A	[24]	6
"[CRLF]m=application "	4	05BD	0010	[24]	6
"[CRLF]m=data "	4	0866	0009	[24]	6
"[CRLF]m=control "	4	078E	000C	[24]	6
"[CRLF]m="	5	05BD	0004	[24]	6
"AS "	3	0A43	0003	[24]	6
"CT "	3	0A40	0003	[24]	6
"RTP/AVP "	2	0C7F	0008	[24]	A
"udp"	4	0675	0003	[24]	A
"0.0.0.0"	4	0DCC	0007	[24]	A
"qos"	2	0D8D	0003	[11]	4
"mandatory"	2	0B16	0009	[11]	4
"optional"	2	0C30	0008	[11]	4
"none"	2	0C0D	0004	[11]	4
"failure"	4	0B62	0007	[11]	4
"unknown"	4	071E	0007	[11]	4
"e2e"	2	0B3A	0003	[11]	4
"local"	2	0B0B	0005	[11]	4
"remote"	2	0B67	0006	[11]	4
"send"	2	09E6	0004	[11]	4
"recv"	2	066D	0004	[11]	4
"sendrecv"	2	0A6C	0008	[11]	4
"AMR"	2	0C11	0003	[28]	8
"octet-align="	4	0A77	000C	[28]	8
"mode-set="	4	085D	0009	[28]	8
"mode-change-period="	4	05DC	0013	[28]	8
"mode-change-neighbor="	4	0599	0015	[28]	8
"crc="	4	08D7	0004	[28]	8
"robust-sorting="	4	0219	000F	[28]	8
"interleaving="	4	045A	000D	[28]	8
"channels="	4	0755	0009	[28]	8

"octet-align"	4 0A77 000B [28] 8
"telephone-event"	4 0181 000F [30] 3.3, 6.1
"events"	4 018B 0006 [30] 6.1
"rate"	4 0634 0004 [30] 6.1, 6.2
"tone"	4 03F3 0004 [30] 6.2

5. Binary representation of the SIP/SDP dictionary

This section contains the result of combining the SIP and the SDP dictionaries described in sections [3](#) and [4](#).

This is the SIP/SDP dictionary (state) that is loaded into SigComp.

```

0000 0d0a 5265 6a65 6374 2d43 6f6e 7461 6374 ..Reject-Contact
0010 3a20 0d0a 4163 6365 7074 2d43 6f6e 7461 : ..Accept-Conta
0020 6374 3a20 0d0a 4f72 6761 6e69 7a61 7469 ct: ..Organizati
0030 6f6e 3a20 0d0a 4d49 4d45 2d56 6572 7369 on: ..MIME-Versi
0040 6f6e 3a20 0d0a 4572 726f 722d 496e 666f on: ..Error-Info
0050 3a20 0d0a 4361 6c6c 2d49 6e66 6f3a 200d : ..Call-Info: .

```

```

0060 0a54 696d 6573 7461 6d70 3a20 0d0a 5265 .Timestamp: ..Re
0070 706c 792d 546f 3a20 0d0a 5375 626a 6563 ply-To: ..Subjec
0080 743a 200d 0a57 6172 6e69 6e67 3a20 3b6d t: ..Warning: ;m
0090 6f62 696c 6974 793d 3b70 7269 6f72 6974 obility=;priorit
00A0 793d 3b68 616e 646c 696e 673d 3b6c 616e y=;handling=;lan
00B0 6775 6167 653d 3b70 7572 706f 7365 3d3b guage=;purpose=;
00C0 6d65 7468 6f64 733d 3b66 6561 7475 7265 methods=;feature
00D0 3d3b 6475 706c 6578 3d3b 7363 6865 6d65 =;duplex=;scheme
00E0 3d3b 6d65 6469 613d 3b63 6c61 7373 3d3b =;media=;class=;
00F0 6361 7573 653d 3b6f 6e6c 793d 3b74 6578 cause=;only=;tex
0100 743d 6d6f 6269 6c65 696d 6167 6566 6978 t=mobileimagefix
0110 6564 6361 7264 6675 6c6c 3431 3420 5265 edcardfull414 Re
0120 7175 6573 742d 5552 4920 546f 6f20 4c6f quest-URI Too Lo
0130 6e67 6976 6575 7072 6f62 6174 696f 6e6f ngiveuprobationo
0140 2d66 6f72 6b34 3231 2045 7874 656e 7369 -fork421 Extensi
0150 6f6e 2052 6571 7569 7265 6465 7363 7269 on Requiredescri
0160 7074 696f 6e6f 2d63 616e 6365 6c34 3834 ptiono-cancel484
0170 2041 6464 7265 7373 2049 6e63 6f6d 706c Address Incompl
0180 6574 656c 6570 686f 6e65 2d65 7665 6e74 etelephone-event
0190 7334 3838 204e 6f74 2041 6363 6570 7461 s488 Not Accepta
01A0 626c 6520 4865 7265 706c 6163 6573 6970 ble Hereplacesip
01B0 6672 6167 3430 3720 5072 6f78 7920 4175 frag407 Proxy Au
01C0 7468 656e 7469 6361 7469 6f6e 2052 6571 thentication Req
01D0 7569 7265 6469 7265 6374 3438 3120 4361 uiredirect481 Ca
01E0 6c6c 2f54 7261 6e73 6163 7469 6f6e 2044 ll/Transaction D
01F0 6f65 7320 4e6f 7420 4578 6973 7461 6c65 oes Not Existale
0200 3d35 3030 2053 6572 7665 7220 496e 7465 =500 Server Inte

```

0210	726e	616c	2045	7272	6f72	6f62	7573	742d	rnal Errorobust-
0220	736f	7274	696e	673d	3630	3420	446f	6573	sorting=604 Does
0230	204e	6f74	2045	7869	7374	2041	6e79	7768	Not Exist Anywh
0240	6572	6563	6569	7665	2d6f	6e6c	7934	3135	ereceive-only415
0250	2055	6e73	7570	706f	7274	6564	204d	6564	Unsupported Med
0260	6961	2054	7970	6572	736f	6e61	6c67	3d31	ia Typersonalg=1
0270	3831	2043	616c	6c20	4973	2042	6569	6e67	81 Call Is Being
0280	2046	6f72	7761	7264	6564	6561	6374	6976	Forwardedeactiv
0290	6174	6564	3431	3620	556e	7375	7070	6f72	ated416 Unsuppor
02A0	7465	6420	5552	4920	5363	6865	6d65	7267	ted URI Schemerg
02B0	656e	6379	3330	3020	4d75	6c74	6970	6c65	ency300 Multiple
02C0	2043	686f	6963	6573	6d69	6d65	7373	6167	Choicesmimessag
02D0	6534	3233	2049	6e74	6572	7661	6c20	546f	e423 Interval To
02E0	6f20	4272	6965	6672	6f6d	2d74	6167	3438	o Brieffrom-tag48
02F0	3320	546f	6f20	4d61	6e79	2048	6f70	7363	3 Too Many Hopsc
0300	7470	6172	616c	6c65	6c34	3837	2052	6571	tparallel487 Req
0310	7565	7374	2054	6572	6d69	6e61	7465	6469	uest Terminatedi
0320	6765	7374	0d0a	613d	6f72	6965	6e74	3a6c	gest..a=orient:l
0330	616e	6473	6361	7065	6e64	696e	674f	5054	andscapendingOPT
0340	494f	4e53	200d	0a41	6363	6570	742d	4c61	IONS ..Accept-La
0350	6e67	7561	6765	3a20	474d	5468	752c	200d	nguage: GMThu, .
0360	0a43	6f6e	7465	6e74	2d44	6973	706f	7369	.Content-Disposi
0370	7469	6f6e	3a20	5365	7020	0d0a	5265	7175	tion: Sep ..Requ
0380	6573	742d	4469	7370	6f73	6974	696f	6e3a	est-Disposition:
0390	204e	6f76	200d	0a50	726f	7879	2d41	7574	Nov ..Proxy-Aut

03A0	686f	7269	7a61	7469	6f6e	3a20	4f63	7420	horization: Oct
03B0	0d0a	4175	7468	656e	7469	6361	7469	6f6e	..Authenticatin
03C0	2d49	6e66	6f3a	2041	7567	2034	3033	2046	-Info: Aug 403 F
03D0	6f72	6269	6464	656e	6f72	6573	6f75	7263	orbiddenoresourc
03E0	6534	3038	2052	6571	7565	7374	2054	696d	e408 Request Tim
03F0	656f	7574	6f6e	6535	3033	2053	6572	7669	eoutone503 Servi
0400	6365	2055	6e61	7661	696c	6162	6c65	0d0a	ce Unavailable..
0410	5072	6f78	792d	4175	7468	656e	7469	6361	Proxy-Authentica
0420	7465	3a20	4d61	7920	3338	3020	416c	7465	te: May 380 Alte
0430	726e	6174	6976	6520	5365	7276	6963	6534	rnative Service4
0440	3035	204d	6574	686f	6420	4e6f	7420	416c	05 Method Not Al
0450	6c6f	7765	6461	7574	682d	696e	7465	726c	lowedauth-interl
0460	6561	7669	6e67	3d35	3133	204d	6573	7361	eaving=513 Messa
0470	6765	2054	6f6f	204c	6172	6765	3638	3720	ge Too Large687
0480	4469	616c	6f67	2054	6572	6d69	6e61	7465	Dialog Terminate
0490	6433	3032	204d	6f76	6564	2054	656d	706f	d302 Moved Tempo
04A0	7261	7269	6c79	0d0a	436f	6e74	656e	742d	rarily..Content-
04B0	456e	636f	6469	6e67	3a20	4665	6220	0d0a	Encoding: Feb ..
04C0	436f	6e74	656e	742d	4c61	6e67	7561	6765	Content-Language
04D0	3a20	4d61	7220	3330	3120	4d6f	7665	6420	: Mar 301 Moved
04E0	5065	726d	616e	656e	746c	790d	0a61	3d6f	Permanently..a=0

04F0	7269	656e	743a	706f	7274	7261	6974	6f2d	rient:portraito-
0500	7461	6734	3032	2050	6179	6d65	6e74	2052	tag402 Payment R
0510	6571	7569	7265	6435	3031	204e	6f74	2049	equired501 Not I
0520	6d70	6c65	6d65	6e74	6564	3439	3120	5265	mplemented491 Re
0530	7175	6573	7420	5065	6e64	696e	6736	3036	quest Pending606
0540	204e	6f74	2041	6363	6570	7461	626c	6534	Not Acceptable4
0550	3933	2055	6e64	6563	6970	6865	7261	626c	93 Undecipherabl
0560	650d	0a61	3d74	7970	653a	6272	6f61	6463	e..a=type:broadc
0570	6173	7472	7565	3430	3620	4e6f	7420	4163	astrue406 Not Ac
0580	6365	7074	6162	6c65	3438	3220	4c6f	6f70	ceptable482 Loop
0590	2044	6574	6563	7465	646d	6f64	652d	6368	Detectedmode-ch
05A0	616e	6765	2d6e	6569	6768	626f	723d	3438	ange-neighbor=48
05B0	3920	4261	6420	4576	656e	746c	730d	0a6d	9 Bad Eventls..m
05C0	3d61	7070	6c69	6361	7469	6f6e	2035	3032	=application 502
05D0	2042	6164	2047	6174	6577	6179	6d6f	6465	Bad Gatewaymode
05E0	2d63	6861	6e67	652d	7065	7269	6f64	3d0d	-change-period=.
05F0	0a61	3d6f	7269	656e	743a	7365	6173	6361	.a=orient:seasca
0600	7065	0d0a	4163	6365	7074	2d45	6e63	6f64	pe..Accept-Encod
0610	696e	673a	200d	0a61	3d6b	6579	2d6d	676d	ing: ..a=key-mgm
0620	743a	4d49	4b45	590d	0a61	3d74	7970	653a	t:MIKEY..a=type:
0630	6d6f	6465	7261	7465	6433	3035	2055	7365	moderated305 Use
0640	2050	726f	7879	3430	3420	4e6f	7420	466f	Proxy404 Not Fo
0650	756e	640d	0a50	726f	7879	2d52	6571	7569	und..Proxy-Requi
0660	7265	3a20	0d0a	613d	7479	7065	3a72	6563	re: ..a=type:rec
0670	766f	6e6c	7975	6470	726f	7879	6d75	6c74	vonlyudproxymult
0680	6970	6172	7469	6d65	6f75	740d	0a61	3d74	ipartimeout..a=t
0690	7970	653a	6d65	6574	696e	670d	0a6b	3d70	ype:meeting..k=p
06A0	726f	6d70	743a	4d45	5353	4147	4520	0d0a	rompt:MESSAGE ..
06B0	4d69	6e2d	4578	7069	7265	733a	200d	0a52	Min-Expires: ..R
06C0	6574	7279	2d41	6674	6572	3a20	0d0a	556e	etry-After: ..Un
06D0	7375	7070	6f72	7465	643a	200d	0a49	6e2d	supported: ..In-

06E0	5265	706c	792d	546f	3a20	3138	3220	51 75	Reply-To: 182 Qu
06F0	6575	6564	0d0a	416c	6572	742d	496e	666f	eued..Alert-Info
0700	3a20	0d0a	613d	6672	616d	6572	6174	653a	: ..a=framerate:
0710	0d0a	5573	6572	2d41	6765	6e74	3a20	756e	..User-Agent: un
0720	6b6e	6f77	6e6f	726d	616c	4341	4e43	454c	knownormalCANCEL
0730	203b	7265	7472	792d	6166	7465	723d	0d0a	;retry-after=..
0740	613d	6d61	7870	7469	6d65	3a34	3130	2047	a=maxptime:410 G
0750	6f6e	6575	6163	6861	6e6e	656c	733d	0d0a	oneuachannels=..
0760	5072	696f	7269	7479	3a20	0d0a	613d	6368	Priority: ..a=ch
0770	6172	7365	743a	0d0a	613d	7364	706c	616e	arset:..a=sdplan
0780	673a	0d0a	613d	7175	616c	6974	793a	0d0a	g:..a=quality:..
0790	6d3d	636f	6e74	726f	6c20	0d0a	5265	706c	m=control ..Repl
07A0	6163	6573	3a20	0d0a	5265	6665	722d	546f	aces: ..Refer-To
07B0	3a20	6970	7365	632d	696b	6552	4546	4552	: ipsec-ikeREFER
07C0	203b	7472	616e	7370	6f72	743d	0d0a	613d	;transport=..a=

07D0	6b65	7977	6473	3a0d	0a6b	3d62	6173	6536	keywds:..k=base6
07E0	343a	3b72	6566	7265	7368	6572	3d0d	0a53	4;;refresher=..S
07F0	6572	7665	723a	200d	0a6b	3d63	6c65	6172	erver: ..k=clear
0800	3a0d	0a61	3d70	7469	6d65	3a0d	0a4d	696e	:..a=ptime:..Min
0810	2d53	453a	200d	0a41	6363	6570	743a	203b	-SE: ..Accept: ;
0820	7265	6365	6976	6564	3d3b	6475	7261	7469	received=;durati
0830	6f6e	3d0d	0a61	3d67	726f	7570	3a49	4e46	on=..a=group:INF
0840	4f20	0d0a	613d	666d	7470	3a0d	0a61	3d6c	0 ..a=fmtp:..a=l
0850	616e	673a	0d0a	613d	746f	6f6c	3a6d	6f64	ang:..a=tool:mod
0860	652d	7365	743d	0d0a	6d3d	6461	7461	2054	e-set=..m=data T
0870	4c53	756e	2c20	3b6d	6574	686f	643d	0d0a	LSun, ;method=..
0880	4461	7465	3a20	0d0a	613d	6d69	643a	0d0a	Date: ..a=mid:..
0890	613d	6361	743a	0d0a	6b3d	7572	693a	3b72	a=cat:..k=uri;;r
08A0	6561	736f	6e3d	6f70	6171	7565	3d3b	6d61	eason=opaque=;ma
08B0	6464	723d	6175	7473	3d3b	7474	6c3d	5765	ddr=auts=;ttl=We
08C0	642c	2053	6174	2c20	4d6f	6e2c	2054	7565	d, Sat, Mon, Tue
08D0	2c20	4672	692c	2063	7263	3d0d	0a7a	3d0d	, Fri, crc=..z=.
08E0	0a72	3d0d	0a65	3d0d	0a75	3d0d	0a69	3d3b	.r=..e=..u=..i=;
08F0	6964	3d3b	713d	7561	7336	3030	2042	7573	id=;q=uas600 Bus
0900	7920	4576	6572	7977	6865	7265	6a65	6374	y Everywhereject
0910	6564	3438	3020	5465	6d70	6f72	6172	696c	ed480 Temporaril
0920	7920	556e	6176	6169	6c61	626c	650d	0a61	y Unavailable..a
0930	3d74	7970	653a	482e	3333	3230	3220	4163	=type:H.33202 Ac
0940	6365	7074	6564	0d0a	5375	6273	6372	6970	cepted..Subscrip
0950	7469	6f6e	2d53	7461	7465	3a20	4a75	6c20	tion-State: Jul
0960	3438	3620	4275	7379	2048	6572	6571	7569	486 Busy Herequi
0970	7265	640d	0a53	6573	7369	6f6e	2d45	7870	red..Session-Exp
0980	6972	6573	3a20	4a61	6e20	3430	3020	4261	ires: Jan 400 Ba
0990	6420	5265	7175	6573	7465	6c3a	0d0a	613d	d Requestel:..a=
09A0	696e	6163	7469	7665	6174	7465	6e64	616e	inactiveattendan
09B0	7463	700d	0a61	3d74	7970	653a	7465	7374	tcp..a=type:test
09C0	6f3d	0d0a	5265	636f	7264	2d52	6f75	7465	o=..Record-Route
09D0	3a20	0d0a	416c	6c6f	772d	4576	656e	7473	: ..Allow-Events
09E0	3a20	0d0a	613d	7365	6e64	6f6e	6c79	0d0a	: ..a=sendonly..
09F0	4576	656e	743a	2020	2020	0d0a	613d	7265	Event: ..a=re
0A00	6376	6f6e	6c79	0d0a	633d	494e	2049	5034	cvonly..c=IN IP4
0A10	200d	0a52	6561	736f	6e3a	200d	0a41	6c6c	..Reason: ..All

0A20	6f77	3a20	0d0a	5061	7468	3a20	3b75	7365	ow: ..Path: ;use
0A30	723d	6672	6f6d	3d6d	6563	683d	0d0a	623d	r=from=mech=..b=
0A40	4354	2041	5320	3432	3020	4261	6420	4578	CT AS 420 Bad Ex
0A50	7465	6e73	696f	6e6f	6e2d	7265	6375	7273	tensionon-recurs
0A60	656e	642d	6f6e	6c79	0d0a	613d	7365	6e64	end-only..a=send
0A70	7265	6376	6964	656f	6374	6574	2d61	6c69	recvideoctet-ali
0A80	676e	3d35	3034	2053	6572	7665	7220	5469	gn=504 Server Ti
0A90	6d65	2d6f	7574	696d	6572	656e	6465	7273	me-outimerenders
0AA0	7061	7574	683d	512e	3835	3035	2056	6572	pauth=Q.8505 Ver

0AB0	7369	6f6e	204e	6f74	2053	7570	706f	7274	sion Not Support
0AC0	6564	6f6d	6169	6e3d	5355	4253	4352	4942	edomain=SUBSCRIB
0AD0	4520	3538	3020	5072	6563	6f6e	6469	7469	E 580 Preconditi
0AE0	6f6e	2046	6169	6c75	7265	7370	6f6e	7365	on Failuresponse
0AF0	3d34	3232	2053	6573	7369	6f6e	2054	696d	=422 Session Tim
0B00	6572	2054	6f6f	2053	6d61	6c6c	6f63	616c	er Too Smallocal
0B10	6970	7365	632d	6d61	6e64	6174	6f72	7934	ipsec-mandatory4
0B20	3133	2052	6571	7565	7374	2045	6e74	6974	13 Request Entit
0B30	7920	546f	6f20	4c61	7267	6532	650d	0a0d	y Too Large2e...
0B40	0a50	2d4d	6564	6961	2d41	7574	686f	7269	.P-Media-Authori
0B50	7a61	7469	6f6e	3a20	4465	6320	7061	7468	zation: Dec path
0B60	616c	6661	696c	7572	656d	6f74	6572	6d69	alfailuremotermi
0B70	6e61	7465	6436	3033	2044	6563	6c69	6e65	nated603 Decline
0B80	7874	6e6f	6e63	653d	3138	3320	5365	7373	xtnonce=183 Sess
0B90	696f	6e20	5072	6f67	7265	7373	6970	733a	ion Progressips:
0BA0	0d0a	5365	6375	7269	7479	2d4d	6563	6861	..Security-Mecha
0BB0	6e69	736d	3a20	4a75	6e20	3438	3520	416d	nism: Jun 485 Am
0BC0	6269	6775	6f75	7365	726e	616d	653d	6661	biguousername=fa
0BD0	6c73	6571	7565	6e74	6961	6c67	6f72	6974	lsequentialgorit
0BE0	686d	3d0d	0a57	5757	2d41	7574	6865	6e74	hm=..WWW-Authent
0BF0	6963	6174	653a	2041	7072	206e	6f2d	7175	icate: Apr no-qu
0C00	6575	654d	4435	2d73	6573	7369	6f6e	6f6e	eueMD5-sessionon
0C10	6541	4d52	4547	4953	5445	5220	3430	3120	eAMREGISTER 401
0C20	556e	6175	7468	6f72	697a	6564	6175	6469	Unauthorizedaudi
0C30	6f70	7469	6f6e	616c	6572	740d	0a43	6f6e	optionalert..Con
0C40	7465	6e74	2d4c	656e	6774	683a	2069	6e66	tent-Length: inf
0C50	6f0d	0a41	7574	686f	7269	7a61	7469	6f6e	o..Authorization
0C60	3a20	6275	7369	6e65	7373	7072	6566	3d0d	: businesspref=.
0C70	0a43	6f6e	7465	6e74	2d54	7970	653a	2052	.Content-Type: R
0C80	5450	2f41	5650	2053	4354	5052	4143	4b20	TP/AVP SCTPRACK
0C90	0d0a	633d	494e	2049	5036	2031	3830	2052	..c=IN IP6 180 R
0CA0	696e	6769	6e67	3b6c	7265	6665	7265	616c	inging;lrefereal
0CB0	6d3d	414b	4176	6f69	6365	2d6d	6169	6c31	m=AKAVoice-mail1
0CC0	3030	2054	7279	696e	6776	3d30	0d0a	6f3d	00 Tryingv=0..o=
0CD0	4e4f	5449	4659	2055	5044	4154	4520	0d0a	NOTIFY UPDATE ..
0CE0	5375	7070	6f72	7465	643a	200d	0a52	6571	Supported: ..Req
0CF0	7569	7265	3a20	0d0a	613d	7274	706d	6170	uire: ..a=rtmpmap
0D00	3a0d	0a45	7870	6972	6573	3a20	0d0a	6d3d	:..Expires: ..m=
0D10	6175	6469	6f20	0d0a	6d3d	7669	6465	6f20	audio ..m=video
0D20	0d0a	613d	636f	6e66	3a0d	0a52	6f75	7465	..a=conf:...Route
0D30	3a20	3b65	7870	6972	6573	3d0d	0a61	3d63	: ;expires=..a=c
0D40	7572	723a	0d0a	613d	6465	733a	0d0a	5241	urr:...a=des:...RA
0D50	636b	3a20	0d0a	5253	6571	3a20	6963	6f6e	ck: ..RSeq: icon

0D60	633d	4259	4520	4469	6765	7374	2063	6e6f	c=BYE Digest cno
0D70	6e63	653d	3130	3072	656c	7572	693d	716f	nce=100reluri=qo
0D80	703d	0d0a	743d	0d0a	733d	5544	5071	6f73	p=..t=..s=UDPqos

```

0D90 786d 6c54 4350 3b63 6f6d 703d 7369 6763 xmlTCP;comp=sigc
0DA0 6f6d 7072 6563 6f6e 6469 7469 6f6e 6f6e ompreconditionon
0DB0 2d75 7267 656e 743b 6272 616e 6368 3d7a -urgent;branch=z
0DC0 3968 4734 624b 5349 502f 322e 302e 302e 9hG4bKSIP/2.0.0.
0DD0 302e 300d 0a4d 6178 2d46 6f72 7761 7264 0.0..Max-Forward
0DE0 733a 2041 6e6f 6e79 6d6f 7573 6970 3a49 s: Anonymousip:I
0DF0 4e56 4954 4520 0d0a 436f 6e74 6163 743a NVITE ..Contact:
0E00 200d 0a43 616c 6c2d 4944 3a20 3230 3020 ..Call-ID: 200
0E10 4f4b 0d0a 4353 6571 3a20 0d0a 4672 6f6d OK..CSeq: ..From
0E20 3a20 0d0a 5669 613a 200d 0a54 6f3a 203b : ..Via: ..To: ;
0E30 7461 673d tag=

```

6. Security Considerations

This memo does not introduce any known security risk.

7. IANA Considerations

None.

8. Author's Addresses

Miguel A. Garcia
Ericsson
FIN-02420, Jorvas, Finland
Tel: +358 9299 3553
e-mail: miguel.a.garcia@ericsson.com

Carsten Bormann
Universitaet Bremen TZI
Postfach 330440
D-28334 Bremen, Germany
Tel: +49 421 218 7024
e-mail: cabo@tzi.org

Joerg Ott
Universitaet Bremen TZI
Bibliothekstr. 1
Bremen 28359, Germany
Tel: +49.421.201-7028
e-mail: jo@tzi.uni-bremen.de

Richard Price
Roke Manor Research Ltd
Romsey, Hants, SO51 0ZN, United Kingdom
Tel: +44 1794 833681
e-mail: richard.price@roke.co.uk

Adam Roach
dynamicsoft
5100 Tennyson Parkway, Suite 1200
Plano, TX 75024, USA
e-mail: adam@dynamicsoft.com

9. Acknowledgements

The authors would like to thank ...

10. References

10.1 Normative references

1. R. Price, H. Hannu, C. Bormann, J. Christoffersson, Z. Liu, J. Rosenberg, Signaling Compression (SigComp), [draft-ietf-rohc-sigcomp-06.txt](#), May 2002, work in progress.

10.2 Informative references

2. J. Rosenberg, H. Schulzrinne, G. Camarillo, A. Johnston, J. Peterson, R. Sparks, M. Handley, E. Schooler, Session Initiation Protocol, Request for Comments 3261, May 2002.
3. M. Garcia et al, 3GPP requirements on SIP, [draft-sipping-garcia-3gpp-reqs-03.txt](#), work in progress.
4. F. Yergeau, "UTF-8, a transformation format of ISO 10646," Request for Comments 2279, Internet Engineering Task Force, Jan. 1998.
5. J. Franks, P. Hallam-Baker, J. Hostetler, S. Lawrence, P. Leach, A. Luotonen, L. Stewart, HTTP Authentication: Basic and Digest Access Authentication, Request for Comments 2617, June 1999.
6. A. Vaha-Sipila, URLs for telephone calls, Request for Comments 2806, Internet Engineering Task Force, Apr. 2000.
7. S. Donovan, The SIP INFO Method, Request for Comments 2976, October 2000.
8. A. Roach, SIP-Specific Event Notification, Request for Comments 3265, May 2002.
9. J. Rosenberg, H. Schulzrinne, Reliability of Provisional Responses in SIP, Request for Comments 3262, May 2002.
10. J. Rosenberg, The Session Initiation Protocol UPDATE Method,

[draft-ietf-sip-update-02.txt](#), April 2002, work in progress.

11.

G. Camarillo, W. Marshall, J. Rosenberg, Integration of Resource Management and SIP, [draft-ietf-sip-manyfolks-resource-07.txt](#), April 2002, work in progress.

12.

R. Sparks, The Refer Method, [draft-sparks-sip-refer-split-00](#), April 2002, work in progress.

13.

R. Mahy, B. Biggs, R. Dean, The SIP Replaces header, [draft-ietf-sip-replaces-01.txt](#), April 2002, work in progress.

14.

R. Sparks, Internet Media Types message/sip and message/sipfrag, [draft-sparks-sip-mimetypes-03.txt](#), April 2002, work in progress.

15.

D. Willis, B. Hoeneisen, SIP Extension for Registering Non-Adjacent Contacts, [draft-willis-sip-path-05](#), work in progress.

16.

H. Schulzrinne, D. Oran, G. Camarillo, The Reason Header Field for the Session Initiation Protocol, [draft-ietf-sip-reason-00.txt](#), April 2002, work in progress.

17.

S. Donovan, J. Rosenberg, The SIP Session Timer, [draft-ietf-sip-session-timer-08.txt](#), October 2001, work in progress.

18.

A. Niemi, J. Arkko, V. Torvinen, HTTP Digest Authentication Using AKA, [draft-ietf-sip-digest-aka-01](#), April 2002, work in progress.

19.

J. Arkko, T. Haukka, S. Sen, L. Valerius, Security Mechanism Agreement for SIP Sessions, [draft-ietf-sip-sec-agree-00.txt](#), April 2002, working progress.

20.

B. Campbell, J. Rosenberg, D. Willis, R. Sparks, H. Schulzrinne, J. Lennox, C. Huitema, B. Aboba, D. Gurle, D. Oran, Session Initiation Protocol Extension for Instant Messaging, [draft-ietf-](#)

[sip-message-03](#), April 2002, work in progress.

21.

W. Marshall, F. Andreassen, D. Evans, SIP Extensions for Media Authorization, [draft-ietf-sip-call-auth-05.txt](#), May 2002, work in progress.

22.

H. Schulzrinne, J. Rosenberg, SIP Caller Preferences and Callee Capabilities, [draft-ietf-sip-callerprefs-04.txt](#), December 2001, work in progress.

23.

G. Camarillo, Compressing the Session Initiation Protocol, [draft-camarillo-sip-compression-00.txt](#), April 2002, work in progress.

24.

M. Handley, V. Jacobson, C. Perkins, SDP: Session Description Protocol, [draft-ietf-mmusic-sdp-new-07.txt](#), work in progress.

SIPPING Working Group

Expiration 11/30/02

Page 20

Garcia et. al. The static SIP/SDP dictionary for SigComp

May 2002

25.

J. Rosenberg, H. Schulzrinne, G. Camarillo, A. Johnston, J. Peterson, R. Sparks, M. Handley, E. Schooler, Session Initiation Protocol, Request for Comments 3261, May 2002.

26.

R. Price, H. Hannu, C. Bormann, J. Christoffersson, Z. Liu, J. Rosenberg, Signaling Compression (SigComp), [draft-ietf-rohc-sigcomp-05.txt](#), March 2002, work in progress.

27.

F. Yergeau, "UTF-8, a transformation format of ISO 10646," Request for Comments 2279, Internet Engineering Task Force, Jan. 1998.

28.

J Sjöberg, M. Westerlund, A. Lakaniemi, Q. Xie, RTP payload format and file storage format for the Adaptive Multi-Rate (AMR) and Adaptive Multi-Rate Wideband (AMR-WB) audio codecs, [draft-ietf-avt-rtp-amr-13.txt](#), January 2002, work in progress.

29.

G. Camarillo, J. Holler, G. AP Eriksson, H. Schulzrinne, Grouping of media lines in SDP, [draft-ietf-mmusic-fid-06.txt](#), February 2002, work in progress.

30.
H. Schulzrinne, S. Petrack, RTP Payload for DTMF Digits,
Telephony Tones and Telephony Signals, [RFC 2833](#), May 2000.
31.
J. Arkko, E. Carrara, F. Lindholm, M. Naslund, K. Norrman, Key
Management Extensions for SDP and RTSP, [draft-ietf-mmusic-kmgmt-ext-04.txt](#), April 2002.
32.
J. Arkko, E. Carrara, F. Lindholm, M. Naslund, K. Norrman,
MIKEY: Multimedia Internet KEYing, [draft-ietf-msec-mikey-01.txt](#)
April 2002.