Network Working Group
Request for Comments: 2446
Category: Standards Track

S. Silverberg
Microsoft
S. Mansour
Netscape
F. Dawson
Lotus
R. Hopson
ON Technologies

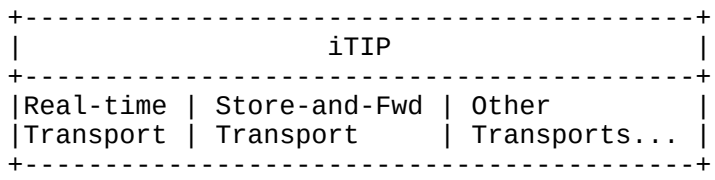
November 1998

1 Introduction

defined by this memo are referred to with lower case, quoted-strings of text, followed by the word "parameter". For example, "value"

The ITIP methods are listed below and their usage and semantics are defined in section 3 of this document.

Method	Description
PUBLISH	Used to publish a Rqqqe qq|uuuuu.e



2.1 Application Protocol

Hence, CUAs must persist the following component properties: "UID", "RECURRENCE-ID", "SEQUENCE", and "DTSTAMP". Furthermore, for each

3.1 Common Component Restriction Tables

The restriction table below applies to properties of the iCalendar object. That is, the properties at the outermost scope. The presence

The following summarizes the methods that are defined for the "VEVENT" calendar component.

Method	Description
PUBLISH	Post notification of an event. Used primarily as a method of advertising the existence of an event.
REQUEST	Make a request for an event. This is an explicit invitation to one or more "Attendees". Event Requests are also used to update or change an

This method type is an iCalendar object that conforms to the following property constraints:

Component/Property	Presence	
METHOD	1	MUST be "REQUEST"

list. If the "Organizer" decides not to add the uninvited CU no further action is required, however the "Organizer" MAY send the uninvited CU a "CANCEL" message. If the "Organizer" decides to add an uninvited CU, a new "ATTENDEE" property is added for the uninvited CU with its property parameters set as the "Organizer" deems appropriate. When forwarding a "REQUEST" to another CU, the forwarding "Attendee" MUST NOT make changes to the VEVENT property set.

3.2.2.7 Updating Attendee Status

The "Organizer" of an event may also request updated status from one or more "Attendees. The "Organizer" sends a "REQUEST" method to the

The "Organizer" may also receive a "REPLY" from one CU on behalf of another. Like the scenario enumerated above for the "Organizer", "Attendees" may have another CU respond on their behalf. This is done using the "sent-by" parameter.

The optional properties listed in the table below (those listed as "0+" or "0 or 1") MUST NOT be changed from those of the original request. If property changes are desired the COUNTER message must be used.

This method type is an iCalendar object that conforms to the following property constraints:

Component/Property	Presence	
METHOD	1	MUST be "REPLY"
VEVENT	1+	All components MUST have the same UID
ATTENDEE	1	MUST be the address of the Attendee replying.
DTSTAMP	1	
ORGANIZER	1	
RECURRENCE-ID	0 or 1	only if referring to an instance of a recurring calendar component. Otherwise it must NOT be present.
UID	1	MUST be the UID of the original REQUEST
SEQUENCE	0 or 1	MUST if non-zero, MUST be the sequence number of the original REQUEST. MAY be present if 0.
ATTACH	0+	

3.2.5 CANCEL

The "CANCEL" method in a "VEVENT" calendar component is used to send

DTEND	0 or 1	if present DURATION MUST NOT be present
DURATION	0 or 1	if present DTEND MUST NOT be present
EXDATE	0+	
EXRULE	0+	
GEO	0 or 1	
LAST-MODIFIED	0 or 1	
LOCATION	0 or 1	
PRIORITY	0 or 1	
RDATE	0+	
RECURRENCE-ID	0 or 1	MUST only if referring to an cQQQ-IDi1 Td(DURST a 0 0

3.3 Methods For VFREEBUSY Components

This section defines the property set for the methods that are applicable to the "VFREEBUSY" calendar component. Each of the methods is defined using a restriction table.

This document only addresses the transfer of busy time information. Applications desiring free time information MUST infer this from available busy time information.

The busy time information within the iCalendar object MAY be grouped into more than one "VFREEBUSY" calendar component. This capability allows busy time periods to be grouped according to some common periodicity, such as a calendar week, month, or year. In this case, each "VFREEBUSY" calendar component MUST include the "ATTENDEE", "DTSTART" and "DTEND" properties in order to specify the source of the busy time information and the date and time interval over which the busy time information covers.

The "FREEBUSY" property value MAY include a list of values, separated by the COMMA character ([US-ASCII] decimal 44). Alternately, multiple busy time periods MAY be specified with multiple instances of the "FREEBUSY" property. Both forms MUST be supported by implementations conforming to this document. Duplicate busy time periods SHOULD NOT be specified in an iCalendar object. However, two different busy time periods MAY overlap.

[illegible]

Method	Description
PUBLISH	Publish unsolicited busy time data.
REQUEST	Request busy time data.
REPLY	Reply to a busy time request.

3.3.1 PUBLISH

VEVENT 0

VTODO	0
VJOURNAL	0
VTIMEZONE	0

3.3.3 REPLY

The "REPLY" method in a "VFREEBUSY" calendar component is used to

3.4 Methods For VTODO Components

This section defines the property set for the methods that are applicable to the "VTODO" calendar component. Each of the methods is defined using a restriction table that specifies the property constraints that define the particular method.

The following summarizes the methods that are defined for the "VTODO" calendar component.

Method	Description

REQUEST-STATUS	0	
VALARM	0+	
VTIMEZONE	0+	MUST be present if any date/time refers to a timezon to
4timezon t Mipin	niTTj CUA	0 -22 Td(4t Murrence valatend possiblyrs)T dIMEription. Ifrs

"Attendee" assigned the "VTODO" calendar component does this by forwarding the original "REQUEST" method to the new CU. The new CU can send a "REPLY" to the "Organizer" of the "VTODO" calendar component. The reply contains an "ATTENDEE" property for the new CU.

RECURRENCE-ID	0 or 1	MUST only if referring to one or more instances of a recurring calendar component. Otherwise it MUST NOT be present.
RELATED-TO	0+	
RESOURCES	0 or 1	This property MAY contain a list of values
RRULE	0+	
PRIORITY	0 or 1	
STATUS	0 or 1	If present it MUST be set to "CANCELLED". MUST NOT be used if purpose is to remove "ATTENDEES" rather than cancel the entire VTODO.
URL	0 or 1	
X-PROPERTY	0+	
REQUEST-STATUS	0	
VTIMEZONE	0 or 1	MUST be present if any date/time refers to a timezone
X-COMPONENT	0+	
VALARM	0	
VEVENT	0	
VFREEBUSY	0	

3.4.6 REFRESH

The "REFRESH" method in a "VTODO" calendar component is used by "Attendees" of an existing "VTODO" calendar component to request an updated description from the "Organizer" of the "VTODO" calendar component. The "Organizer" of the "VTODO" calendar component MAY use this method to request an updated status from the "Attendees". The "REFRESH" method MUST specify the "UID" property corresponding to the "VTODO" calendar component needing update.

A refresh of a recurrence instance of a "VTODO" calendar component may be requested by specifying the "RECURRENCE-ID" property corresponding to the associated "VTODO" calendar component. The "Organizer" responds with the latest description and rendition of the "VTODO" calendar component. In most cases this will be a REQUEST unless the "VTODO" has been cancelled, in which case the ORGANIZER MUST send a "CANCEL". This method is intended to facilitate machine

3.4.7 COUNTER

The "COUNTER" method in a "VTODO" calendar component is used by an "Attendee" of an existing "VTODO" calendar component to submit to the

LOCATION	0 or 1	
PERCENT-COMPLETE	0 or 1	
RDATE	0+	
RECURRENCE-ID	0 or 1	MUST only 3.5if referring to an instance of a recurring calendar component. Otherwise it MUST NOT be present.
RELATED-TO	0+	
REQUEST-STATUS	0+	
RESOURCES	0 or 1	This property MAY contain a list of values
RRULE	0 or 1	
SEQUENCE	0 or 1	MUST echo the original SEQUENCE number. MUST be present if non-zero. MAY be present if zero.
STATUS	0 or 1	MAY be one of COMPLETED/NEEDS ACTION/IN-PROCESS/CANCELLED
URL	0 or 1	
X-PROPERTY	0+	

VALARM	0+	
VTIMEZONE	0 or 1	MUST be present if any date/time refers to a timezone
X-COMPONENT	0+	

VEVENT	0
VFREEBUSY	0

3.4.8 DECLINECOOvvvSY ROvvvSY ROvMeRY ROvMeRY oY ROoUAoter 03.4.8 DECr 1ds pro

VEVENTOvMpro 03.4.8 DE.d(X-COMPONENT EEB(VEVENTOypeREEBERCEC ROvvvSYobY oY

ATTACH 0+

+=================+===+

		recurring calendar component. Otherwise it MUST NOT be present.
RELATED-TO	0+	
RRULE	0+	
SEQUENCE	0 or 1	MUST echo the original SEQUENCE number. MUST be present if non-zero. MAY be present if zero.
STATUS	0 or 1	MAY be one of DRAFT/FINAL/CANCELLED
SUMMARY	0 or 1	Can be null
URL	0 or 1	
X-PROPERTY	0+	
ATTENDEE	0	
VALARM	0+	
VTIMEZONE	0+	MUST be present if any date/time refers to a timezone
X-COMPONENT	0+	
VEVENT	0	
VFREEBUSY	0	
VTODO	0	

3.5.2 ADD

The "ADD" method in a "VJOURNAL" calendar component is used to add one or more instances to an existing "VJOURNAL" entry. There is no response to the "Organizer".

If the "UID" property value in the "ADD" is not found on the recipient's calendar, then the recipient MAY treat the "ADD" as a "PUBLISH".

This method type is an iCalendar object that conforms to the following property constraints:

Component/Property	Presence	
METHOD	1	MUST be "ADD"
VJOURNAL	1	
DESCRIPTION	1	Can be null.
DTSTAMP	1	
DTSTART	1	
ORGANIZER	1	
SEQUENCE	1	MUST be greater than 0
UID	1	MUST match that of the original journal
ATTACH	0+	

CATEGORIES	0 or 1	This property MAY contain a list of values
CLASS	0 or 1	
COMMENT	0 or 1	
CONTACT	0+	

	ignored. Scheduled as a single component.	name and value MAY be specified.
2.9	Success, truncated end date	DTEND pvvve vv

3.9	Unsupported version.	VERSION property name and value MAY be specified.
3.10	Request entity too large.	None.
3.11	Required component or property missing.	Component or property name MAY be specified.
3.12	Unknown component or property found	Component or property name MAY be specified
3.13	Unsupported component or property found	Component or property name MAY be specified
3.14	Unsupported capability	Method or action MAY be specified
4.0	Event conflict. Date/time is busy.	DTSTART and DTEND property name and values MAY be specified.
5.0	Request MAY supported.	Method property value MAY be specified.
5.1	Service unavailable.	ATTENDEE property value MAY be specified.
5.2	Invalid calendar service.	ATTENDEE property value MAY be specified.
5.3	No scheduling support for user.	ATTENDEE property value MAY be specified.

3.7 Implementation Considerations

3.7.1 Working With Recurrence Instances

iCalendar includes a recurrence grammar to represent recurring events. The benefit of such a grammar is the ability to represent a number of events in a single object. However, while this simplifies creation of a recurring event, meeting instances still need to be

Since implementations may elect to store recurring events as either a single event object or a collection of discreet, related event objects, the protocol is designed so that each recurring instance may be both referenced and versioned. Hence, implementations that choose to maintain per-instance properties (such as "ATTENDEE" property "partstat" parameter) may do so. However, the protocol does not require per-instance recognition unless the instance itself must be renegotiated.

The scenarios for recurrence instance referencing are listed below. For purposes of simplification a change to an event refers to a "trigger property." That is, a property that has a substantive effect on the meeting itself such as start time, location, due date

authorizing an update. Second, it is prudent to provide a point of contact for anyone who receives a published component in case of problems.

There are valid [RFC-822] addresses that represent groups. Sending email to such an address results in mail being sent to multiple recipients. Such an address may be used as the value of an

```
TRIGGER:-PT2H
ACTION:DISPLAY
DESCRIPTION:You should be leaving for the game now.
END:VALARM
BEGIN:VALARM
TRIGGER:-PT30M
ACTION:AUDIO
END:VALARM
END:VEVENT
END:VCALENDAR
```

The "RELATED-TO" field contains the "UID" property of a related calendar event. The "SEQUENCE" property 3 indicates that this event supersedes versions 0, 1, and 2.

4.1.5 Anniversaries or Events attached to entire days

This example demonstrates the use of the "value" parameter to tie a

Action	"Organizer"	Attendee
Initiate a meeting request	"A" sends a REQUEST message to "B", "C", and "D"	
Accept the meeting request		"B" sends a REPLY message to "A" with its ATTENDEE "partstat" para-set to "accepted"
Decline the meeting request		"C" sends a REPLY message to "A" with its ATTENDEE "partstat" para-set to "declined"
Tentatively accept the meeting request		"D" sends a REPLY message to "A" with its ATTENDEE "partstat" para-set to "tentative"
Confirm meeting status with attendees	"A" sends a REQUEST message to "B" and "D" with updated information.	

4.2.1 A Group Event Request

A sample meeting request is sent from "A" to "B", "C", and "D". _E_ is also sent a copy of the request but is not expected to attend and need not reply. "E" illustrates how CUAs might implement an "FYI" type feature. Note the use of the "role" parameter. The default value for the "role" parameter is "req-participant" and it need not be enumerated. In this case we are using the value "non-participant" to indicate "E" is a non-attending CU. The parameter is not needed on other "Attendees" since "participant" is the default value.

```
BEGIN:VCALENDAR
PRODID:-//ACME/DesktopCalendar//EN
METHOD:REQUEST
VERSION:2.0
BEGIN:VEVENT
ORGANIZER:Mailto:A@example.com
ATTENDEE;ROLE=CHAIR;PARTSTAT=ACCEPTED;CN=BIG A:Mailto:A@example.com
ATTENDEE;RSVP=TRUE;TYPE=INDIVIDUAL;CN=B:Mailto:B@example.com
ATTENDEE;RSVP=TRUE;TYPE=INDIVIDUAL;CN=C:Mailto:C@example.com
```

```
   BEGIN:VCALENDAR
   PRODID:-//ACME/DesktopCalendar//EN
   METHOD:COUNTER
   VERSION:2.0
   BEGIN:VEVENT
   ORGANIZER:Mailto:A@example.com
   ATTENDEE;ROLE=CHAIR;PARTSTAT=ACCEPTED:Mailto:A@example.com
   ATTENDEE;RSVP=TRUE;TYPE=INDIVIDUAL:Mailto:B@example.com
   ATTENDEE;RSVP=TRUE;TYPE=INDIVIDUAL:Mailto:C@example.com
   DTSTART:19970701T160000Z
   DTEND:19970701T190000Z
   DTSTAMP:19970612T190000Z
   SUMMARY:Discuss the Merits of the eleccZZZe ZZq2T19000rimple.com
SEQUENCE:ber 1998
   ATTEto:B BEGIN:VCALENDAR
```

```
BEGIN:VCALENDAR
PRODID:-//ACME/DesktopCalendar//EN
METHOD:DECLINECOUNTER
VERSION:2.0
BEGIN:VEVENT
ORGANIZER:Mailto:A@example.com
ATTENDEE;RSVP=TRUE;TYPE=INDIVIDUAL:Mailto:B@example.com
COMMENT:Sorry, I cannot change this meeting time
UID:calsrv.example.com-873970198738777@example.com
SEQUENCE:0
DTSTAMP:19970614T190000Z
END:VEVENT
END:VCALENDAR
```

4.2.5 Delegating an Event

When delegating an event request to another "Calendar User", the "Delegato QQQ W QqTd(SQbIeiie1matdDy no protocolr", the)Tj 0 -11limitj 0onelegENT ENENT "DeIeiENTsponsibilities1d(irad ofgato QQQ W Q d(0 -22 Td(WMUST:j 0

```
   SEQUENCE:1
   STATUS:CONFIRMED
   END:VEVENT
   END:VCALENDAR
```

4.3 Busy Time Examples

```
   DTSTAMP:19970613T190030Z
   END:VFREEBUSY
   END:VCALENDAR
```

```
UID:calsrv.example.com-873970198738777@example.com
SEQUENCE:0
STATUS:CONFIRMED
END:VEVENT
END:VCALENDAR
```

The first two components of this iCalendar object are the time zone components. The "DTSTART" date coincides with the first instance of the RRULE property.

The recurring meeting is defined in a particular time zone, presumably that of the originator. The client for each "Attendee" has the responsibility of determining the recurrence time in the "Attendee's" time zone.

```
BEGIN:VEVENT
UID:123456789@host1.com
SEQUENCE:7
RRULE:WKST=SU;BYDAY=TH;FREQ=WEEKLY
ORGANIZER:Mailto:A@example.com
ATTENDEE;ROLE=CHAIR;PARTSTAT=ACCEPTED:Mailto:A@example.com
ATTENDEE;RSVP=TRUE:Mailto:B@example.com
SUMMARY:Review Accounts
DTSTART:19980303T210000Z
DTEND:19980303T220000Z
DTSTAMP:19980303T193000Z
LOCATION:The Usual conference room
STATUS:CONFIRMED
END:VEVENT
END:VCALENDAR
```

Alternatively, if the "Organizer" is not concerned with per-instance updates, the entire event can be rescheduled using a "REQUEST". This is done by using the "UID" of the event to reschedule and including the modified "RRULE". Note, that since this is an entire rescheduling of the event, any instance-specific information will be lost.

```
BEGIN:VCALENDAR
METHOD:REQUEST
PRODID:-//RDU Software//NONSGML HandCal//EN
VERSION:2.0
BEGIN:VEVENT
UID:123456789@host1.com
SEQUENCE:7
RRULE:WKST=SU;BYDAY=TU,TH;FREQ=WEEKLY
ORGANIZER:Mailto:A@example.com
ATTENDEE;ROLE=CHAIR;PARTSTAT=ACCEPTED:Mailto:A@example.com
ATTENDEE;RSVP=TRUE:Mailto:B@example.com
SUMMARY:Review Accounts
DTSTART:19980303T210000Z
DTEND:19980303T220000Z
DTSTAMP:19980303T193000Z
LOCATION:The White Room
STATUS:CONFIRMED
END:VEVENT
END:VCALENDAR
```

The next series of examples illustrate how an "Organizer" would

```
END:VEVENT
END:VCALENDAR
```

4.5 Group To-do Examples

Individual "A" creates a group task in which individuals "A", "B", "C" and "D" will participate. Individual "B" confirms acceptance of the task. Individual "C" declines the task. Individual "D"

Attendee indicates completion		"D" sends a "REPLY" message indicating completion

4.5.1 A VTODO Request

A sample "REQUEST" for a "VTODO" calendar component that "A" sends to "B", "C", and "D".

```
BEGIN:VCALENDAR
```

```
END:VTODO
END:VCALENDAR
```

```
BEGIN:VTODO
ATTENDEE;PARTSTAT=IN-PROCESS:Mailto:B@example.com
PERCENT-COMPLETE:75
UID:calsrv.example.com-873970198738777-00@example.com
DTSTAMP:19970717T233000Z
RECURRENCE-ID:19980101T170000Z
SEQUENCE:1
END:VTODO
END:VCALENDAR
```

4.6 Journal Examples

The iCalendar object below describes a single journal entry for October 2, 1997. The "RELATED-TO" property references the phone conference event for which minutes were taken.

```
BEGIN:VCALENDAR
METHOD:PUBLISH
PRODID:-//ACME/DesktopCalendar//EN
VERSION:2.0
BEGIN:VJOURNAL
DTSTART:19971002T200000Z
ORGANIZER:MAILTO:A@Example.com
SUMMARY:Phone conference minutes
DESCRIPTION:The editors meeting was held on October 1, 1997.
  Details are in the attached document.
UID:0981234-1234234-2410@example.com
RELATED-TO:0981234-1234234-2402-35@example.com
```

```
ATTENDEE:Mailto:D@example.com
UID: guid-1-12345@host1.com
DTSTAMP:19970603T094000
END:VEVENT
END:VCALENDAR
```

4.7.2 Bad RECURRENCE-ID

Component instances are identified by the combination of "UID", "RECURRENCE-ID", and "SEQUENCE". When an "Organizer" sends a request to an "Attendee", there are three cases in which an instance cannot be found. They are:

Action	"Organizer"	Attendee
Update an instance request	"A" sends "REQUEST" message to "B"	
Attendee requests refresh because "RECURRENCE-ID" was not found		"B" sends a "REFRESH" message to "A"
Refresh the entire Event	"A" sends the latest copy of the Event to "B"	
Attendee handles the request and updates the instance		"B" updates to the latest copy of the meeting.

Request from "A":

```
BEGIN:VCALENDAR
METHOD:REQUEST
PRODID:-//RDU Software//NONSGML HandCal//EN
VERSION:2.0
BEGIN:VEVENT
UID:acme-12345@host1.com
SEQUENCE:3
RRULE:FREQ=WEEKLY
RDATE;VALUE=PERIOD:19970819T210000Z/199700819T220000Z
ORGANIZER:Mailto:A@example.com
ATTENDEE;ROLE=CHAIR;PARTSTAT=ACCEPTED:Mailto:A@example.com
ATTENDEE:Mailto:B@example.com
DESCRIPTION:IETF-C&S Conference Call
```

missed at least one update and needs a new copy of the event. "B" requests the latest copy of the event with the following refresh message:

```
BEGIN:VCALENDAR
PRODID:-//RDU Software//NONSGML HandCal//EN
METHOD:REFRESH
VEHODRESH
ielRESH
```

Event-Related Components	Fallback
VALARM	Reply with Not Supported
VTIMEZONE	Required if any DateTime value refers to a time zone.

Component Property	Fallback
ATTACH	Ignore

Component Property	Fallback
ATTACH	Ignore
ATTENDEE	Required if JOURNAL-REQUEST is implemented; otherwise ignore
CATEGORIES	Ignore
CLASS	Ignore
COMMENT	Ignore
CONTACT	Ignore
CREATED	Ignore
DESCRIPTION	Required
DTSTAMP	Required
DTSTART	Required
EXDATE	Ignore
EXRULE	Ignore Reply with Not Supported. If implemented, VTIMEZONE MUST also be implemented.
LAST-MODIFIED	Ignore
ORGANIZER	Ignore
RECURRENCE-ID	Ignore
RELATED-TO	Ignore
RDATE	Ignore.
RRULE	Ignore. The first instance occurs on the DTSTART property. If implemented, VTIMEZONE MUST also be implemented.
SEQUENCE	Required
STATUS	Ignore
SUMMARY	Required
URL	Ignore
UID	Required
X-	Ignore

5.2.2 Unexpected Reply from an Unknown Delegate

When an "Attendee" delegates an item to another CU they MUST send a "REPLY" method to the "Organizer" using the "ATTENDEE" properties to indicate that the request was delegated and to whom. Hence, it is possible for an "Organizer" to receive an "REPLY" from a CU not listed as one of the original "Attendees". The resolution is left to the implementation but it is expected that the calendaring software will either accept the reply or hold it until the related "REPLY" method is received from the "Delegator". If the version of the "REPLY" method is out of date the "Organizer" SHOULD treat the message as a "REFRESH" message and update the delegate with the correct version.

5.3 Sequence Number

Under some conditions, a CUA may receive requests and replies with the same "SEQUENCE" property value. The "DTSTAMP" property is utilized as a tie-breaker when two items with the same "SEQUENCE" property value are evaluated.

maliciously changes the "ATTENDEE" parameters may be constructed by

[RFC-1847] in the iTIP transport binding. This helps mitigate the threats of spoofing, eavesdropping and malicious changes in transit.

6.2.1 Use of [RFC-1847] to secure iTIP transactions

iTIP transport bindings MUST provide a mechanism based on Security Multiparts for MIME [RFC-1847] to enable authentication of the sender’s identity, and privacy and integrity of the data being

7 Acknowledgments

A hearty thanks to the following individuals who have participated in the drafting, review and discussion of this memo:

Anik Ganguly, Dan Hickman, Paul Hill, Daryl Huff, Bruce Kahn, Antoine Leca, Bob Mahoney, John Noerenberg, Leo Parker, John Rose, Doug Royer, Vinod Seraphin, Richard Shusterman, Derik Stenerson, John Sun, Alexander Taler, Kevin Tsurutome.

8 Bibliography

[iCAL] Dawson, F. and D. Stenerson, "Internet Calendaring and Scheduling Core Object Specification - iCalendar", RFC 2445, November 1998.

[iMIP] Dawson, F., Mansour, S. and S. Silverberg, "iCalendar Message-Based Interoperability Protocol - iMIP", RFC 2447, November 1998.

9 Authors' Addresses

The following address information is provided in a vCard v3.0, Electronic Business Card, format.

The authors of this memo are:

```
BEGIN:VCARD
VERSION:3.0
N:Dawson;Frank
FN:Frank Dawson
ORG:Lotus Development Corporation
ADR;WORK;POSTAL;PARCEL:;;6544 Battleford Drive;Raleigh;NC;27613-
 3502;USA
TEL;TYPE=WORK,MSG:+1-919-676-9515
TEL;TYPE=WORK,FAX:+1-919-676-9564
EMAIL;TYPE=PREF,INTERNET:Frank_Dawson@Lotus.com
EMAIL;TYPE=INTERNET:fdawson@earthlink.net
URL:http://home.earthlink.net/~fdawson
END:VCARD

BEGIN:VCARD
VERSION:3.0
N:Hopson;Ross
FN:Ross Hopson
ORG:On Technology, Inc.
ADR;TYPE=WORK,POSTAL,PARCEL:;Suite 1600;434 Fayetteville St.
  Mall\, Two Hannover Square;Raleigh;NC;27601
TEL;TYPE=WORK,MSG:+1-919-890-4036
TEL;TYPE=WORK,FAX:+1-919-890-4100
EMAIL;TYPE=INTERNET:rhopson@on.com
END:VCARD

BEGIN:VCARD
VERSION:3.0
N:Mansour;Steve
FN:Steve Mansour
ORG:Netscape Communications Corporation
ADR;TYPE=WORK,POSTAL,PARCEL:;;501 East Middlefield Road;Mountain
  View;CA;94043;USA
TEL;TYPE=WORK,MSG:+1-650-937-2378
TEL;TYPE=WORK,FAX:+1-650-937-2103
EMAIL;TYPE=INTERNET:sman@netscape.com
END:VCARD
```

```
BEGIN:VCARD
VERSION:3.0
N:Silverberg;Steve
FN:Steve Silverberg
ORG:Microsoft Corporation
ADR;TYPE=WORK,POSTAL,PARCEL:;;One Microsoft Way;
Redmond;WA;98052-6399;USA
TEL;TYPE=WORK,MSG:+1-425-936-9277
TEL;TYPE=WORK,FAX:+1-425-936-8019
EMAIL;INTERNET:stevesil@Microsoft.com
END:VCARD
```

The iCalendar object is a result of the work of the Internet Engineering Task Force Calendaring and scheduling Working Group. The chairman of that working group is:

```
BEGIN:VCARD
VERSION:3.0
N:Ganguly;Anik
FN:Anik Ganguly
ORG:Open Text Inc.
ADR;TYPE=WORK,POSTAL,PARCEL:;Suite 101;38777 West Six Mile Road;
 Livonia;MI;48152;USA
TEL;TYPE=WORK,MSG:+1-734-542-5955
EMAIL;TYPE=INTERNET:ganguly@acm.org
END:VCARD
```

The co-chairman of that working group is:

```
BEGIN:VCARD
VERSION:3.0
N:Moskowitz;Robert
FN:Robert Moskowitz
NICKNAME:Bob
EMAIL; TYPE=INTERNET:rgm-ietf@htt-consult.com
END:VCARD
```