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Event Publishing Extensions to iCalendar
draft-douglass-calendar-extension-04

Abstract

This specification introduces a number of new iCalendar properties which are of particular use for event publishers and in social networking.

Status of This Memo

This Internet-Draft is submitted in full conformance with the provisions of BCP 78 and BCP 79.

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This Internet-Draft will expire on August 5, 2014.

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1. Introduction

The currently existing iCalendar standard [RFC5545] lacks useful methods for referencing additional, external information relating to calendar components.

This document defines a number of properties referencing external information that can provide additional information about an iCalendar component. The intent is to allow interchange of such information between applications or systems (e.g., between clients,

between client and server, and between servers). Formats such as VCARD are likely to be most useful.

In addition a new property is defined to support HTML descriptions.

1.1. Conventions Used in This Document

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "NOT RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [RFC2119].

2. Typed References

The properties defined here can all reference external meta-data which may be used by applications to provide enhanced value to users. By providing type information as parameters, clients and servers are able to discover interesting references and make use of them, perhaps for indexing or the presentation of additional related information for the user.

These properties are designed to handle common use cases in event publication. It is generally important to provide information about the organizers of such events. Sponsors wish to be referenced in a prominent manner. In social calendaring it is often important to identify the active associates in the event, for example a school sports team, and the inactive associates, for example the parents.

The [RFC5545] LOCATION property provides only an unstructured single text value for specifying the location where an event (or "TODO" item) will occur. This is inadequate for use cases where structured location information (e.g. address, region, country, postal code) is required or preferred, and limits widespread adoption of iCalendar in those settings.

Using STRUCTURED-LOCATION, information about a number of interesting locations can be communicated, for example, parking, restaurants and the venue. Servers and clients can retrieve the objects when storing the event and use them to index by geographic location.

When a calendar client receives a calendar component it can search the set of supplied properties looking for those of particular interest. The TYPE and FMTTYPE parameters, if supplied, can be used to help the selection.

2.1. Use Cases

The main motivation for these properties has been event publication but there are opportunities for use elsewhere. The following use cases will describe some possible scenarios.

2.1.1. Piano Concert Performance

In putting together a concert there are many associates: piano tuner, performer, stage hands etc. In addition there are sponsors and various contacts to be provided. There will also be a number of related locations. A number of events can be created, all of which relate to the performance in different ways.

There may be an iTip meeting request for the piano tuner who will arrive before the performance. Other members of staff may also receive meeting requests.

An event can also be created for publication which will have an ASSOCIATE reference to the pianist providing vcard information about the performer. This event would also hold information about parking, local subway stations and the venue itself. In addition, there will be sponsorship information for sponsors of the event and perhaps paid sponsorship properties essentially advertising local establishments.

2.1.2. Itineraries

These properties also provide opportunities for the travel industry. When booking a flight the ASSOCIATE property can be used to provide references to businesses at the airports and to car hire businesses at the destination.

The embedded location information can guide the traveller at the airport or to their final destination. The contact information can provide detailed information about the booking agent, the airlines and car hire companies and the hotel.

3. Modifications to Calendar Components

The following changes to the syntax defined in iCalendar [RFC5545] are made here. New elements are defined in subsequent sections.

```
   eventprop /= *(
                 ;
                 ; The following are OPTIONAL,
                 ; and MAY occur more than once.
                 ;
                 styleddescription / strucloc / strucres / associate
                 ;
                 )

   todoprop /= *(
                ;
                ; The following are OPTIONAL,
                ; and MAY occur more than once.
                ;
                styleddescription / strucloc / strucres / associate
                ;
                )

   jourprop /= *(
                ;
                ; The following are OPTIONAL,
                ; and MAY occur more than once.
                ;
                styleddescription / associate
                ;
                )
```

4. Relating Component Properties

Within a single component we sometimes need to specify which properties are related to each other and their state. For example, by relating a STYLED-DESCRIPTION property to the DESCRIPTION property and saving an indication of state, clients can know if one of them has changed and notify the user.

This specification defines two new property parameters to enable this relating of properties, GROUP and HASH.

The GROUP parameter provides identifiers for each group within the component in which it is specified. It may be specified on any property.

The HASH parameter is intended to facilitate backwards compatability, allowing clients aware of the new STYLED-DESCRIPTION property to determine if an older client has modified the DESCRIPTION.

The value of HASH is the base-64 encoded hashed value of the property to which the current property is related

In the example below a STYLED-DESCRIPTION property is related to the DESCRIPTION property both of which have a GROUP value of "DESC". If the DESCRIPTION property value is changed then the hash-value stored with the STYLED-DESCRIPTION will no longer match.

```
DESCRIPTION;GROUP=DESC:Some Text
STYLED-DESCRIPTION;GROUP=DESC;HASH="zlWCFIxvDBKCM1uH317Uvkt
 4E5k=,SHA-1":<p>Some Text</p>
```

5. New Property Parameters

5.1. Hash

Parameter name: HASH

Purpose: To specify the hash value and method of the DESCRIPTION.

Format Definition:

This parameter is defined by the following notation:

```
hashparam = "HASH" "="    /
                DQUOTE hashval "," hashname DQUOTE
; A structured value with the following components:
hashval = *QSAFE-CHAR
; Base64 encoded hash of the value of the property referenced by
; the idval segment
hashname = *QSAFE-CHAR
; Name of the hash function used to calculate the hash value
```

Description: This parameter can be specified on STYLED-DESCRIPTION and is used to detect changes in that property to enable the values of all variants to be kept synchronized.

The text value is a hash value (encoded as a base-64 string), followed by a token describing the algorithm used to calculate the hash value. Algorithm names from the IANA Hash Function Textual Names registry [] MUST be used.

Each element of the value is separated by a COMMA character,

Clients maintaining multiple versions of a description MAY use this parameter to indicate that the associated STYLED-DESCRIPTION property needs to be updated, Removing the parameter indicates that the property may be out of synch.

5.2. Group

Parameter name: GROUP

Purpose: To identify groups of properties.

Format Definition:

This parameter is defined by the following notation:

```
groupparam   = "GROUP" "=" paramtext *("," paramtext)
```

Description: This parameter can be specified on any property. It is used to identify properties which are related to other properties within the same component.

Rather than adding extra parameters to properties the GROUP parameter allow one or more properties to provide extra metadata. For example we may wish to relate some form of status property to an ATTENDEE to describe the status of a task.

It is the responsibility of calendar applications to maintain the relationships between grouped items. Deleting one member of a group may imply deleting others or removing GROUP parameters from other properties.

5.3. Loctype

Parameter name: LOCTYPE

Purpose: To specify the type of location.

Format Definition:

This parameter is defined by the following notation:

```
loctypeparam   = "LOCTYPE" "=" param-value
```

Description: This parameter MAY be specified on STRUCTURED-LOCATION and provides a way to differentiate multiple properties. For example, it allows event producers to provide location information for the venue and the parking.

Values for this parameter are taken from the values defined in [RFC4589]. New location types SHOULD be registered in the manner laid down in that specification

5.4. Assoctype

Parameter name: ASSOCTYPE

Purpose: To specify the type of associate.

Format Definition:

This parameter is defined by the following notation:

```
  assoctypeparam   = "ASSOCTYPE" "=" param-value
```

Description: This parameter MAY be specified on the ASSOCIATE property, and defines the type of association. Allowable values are defined in Section 7.

5.5. Restype

Parameter name: RESTYPE

Purpose: To specify the type of resource.

Format Definition:

This parameter is defined by the following notation:

```
  restypeparam   = "RESTYPE" "=" param-value
```

Description: This parameter MAY be specified on STRUCTURED-RESOURCE and provides a way to differentiate multiple properties.

Values for this parameter are taken from the values defined in [todo]. New resource types SHOULD be registered in the manner laid down in that specification

5.6. Order

Parameter name: ORDER

Purpose: To define ordering for the associated property.

Format Definition:

This parameter is defined by the following notation:

```
  orderparam    = "ORDER" "=" integer ;Must be in the range [1..100]
```

Description: The ORDER parameter is OPTIONAL and is used to indicate the relative ordering of the corresponding instance of a property. Its value MUST be an integer between 1 and 100 that quantifies the order. Lower values correspond to a higher level of ordering, with 1 being the highest.

When the parameter is absent, the default MUST be to interpret the property instance as being at the lowest level of ordering.

Note that the value of this parameter is to be interpreted only in relation to values assigned to other corresponding instances of the same property in the same entity. A given value, or the absence of a value, MUST NOT be interpreted on its own.

This parameter MAY be applied to any property that allows multiple instances.

5.7. Label

Parameter name: LABEL

Purpose: To provide a human readable label.

Format Definition:

This parameter is defined by the following notation:

```
labelparam     = "LABEL" "=" DQUOTE text DQUOTE
```

Description: This parameter MAY be specified on STYLED-DESCRIPTION, ASSOCIATE, STRUCTURED-LOCATION and STRUCTURED-RESOURCE and provides a human readable label, perhaps for icons or links..

6. New Properties

6.1. Associate

Property name: ASSOCIATE

Purpose: This property provides a typed reference to external information about associates in an event or optionally a plain text typed value.

Value type: The default value type for this property is URI. The value type can also be set to TEXT to indicate plain text content.

Property Parameters: Non-standard, label, assoctype, order or format type parameters can be specified on this property.

Conformance: This property MAY be specified in any iCalendar component.

Description: When used in a component the value of this property points to information about an event associate. This is NOT an attendee in a scheduling sense and the ATTENDEE property may in fact be specified in addition. Associates in events can be individuals or organizations, for example a soccer team, the spectators, or the musicians.

Format Definition:

This property is defined by the following notation:

```
  associate     = "ASSOCIATE" assocparam
                    (
                      ";" "VALUE" "=" "URI"
                      ":" uri)  /
                    (
                      ";" "VALUE" "=" "TEXT"
                      ":" text
                    )
                    CRLF

  assocparam      = *(

                  ; the following are OPTIONAL
                  ; but MUST NOT occur more than once

                  (";" fmttypeparam) /
                  (";" labelparam) /
                  (";" orderparam) /
                  (";" assoctypeparam) /
                  (";" groupparam) /

                  ; the following is OPTIONAL
                  ; and MAY occur more than once

                  (";" other-param)

                  )
```

Note: When the ORDER parameter is supplied it defines the ordering of ASSOCIATE properties with the same value for the TYPE parameter.

Example:

The following is an example of this property. It points to a VCARD providing information on an event associate.

```
ASSOCIATE;ASSOCTYPE=PRINCIPAL_PERFORMER:
  http://dir.example.com/vcard/aviolinist.vcf
```

Example:

The following is an example referring to a VCARD providing information on the primary contact.

```
ASSOCIATE;FMTTYPE=text/vcard;
  ASSOCTYPE=PRIMARY-CONTACT;LABEL=A contact:
  http://dir.example.com/vcard/contacts/contact1.vcf
```

Example:

The following is an example of the property used to link to VCARD information on the event planner.

```
ASSOCIATE;FMTTYPE=text/vcard;
  ASSOCTYPE=PLANNER-CONTACT;LABEL=ClownsIsUs:
  http://dir.example.com/vcard/clowns-is-us.vcf
```

6.2. Styled-Description

Property name: STYLED-DESCRIPTION

Purpose: This property provides for one or more rich-text descriptions to replace or augment that provided by the DESCRIPTION property.

Value type: There is no default value type for this property. The value type can be set to URI or TEXT. Other text-based value types can be used when defined in the future. Clients MUST ignore any properties with value types they do not understand.

Property Parameters: IANA, non-standard, hash, id, alternate text representation, and language property parameters can be specified on this property.

Conformance: The property can be specified multiple times in the "VEVENT", "VTODO", "VJOURNAL", or "VALARM" calendar components.

Description: This property is used in the "VEVENT" and "VTODO" to capture lengthy textual descriptions associated with the activity. This property is used in the "VJOURNAL" calendar component to capture one or more textual journal entries. This property is

used in the "VALARM" calendar component to capture the display text for a DISPLAY category of alarm, and to capture the body text for an EMAIL category of alarm.

VALUE=TEXT is used to provide rich-text variants of the plain-text DESCRIPTION property.

VALUE=URI is used to provide a link to rich-text content which is expected to be displayed inline as part of the event.

The "HASH" parameter value is calculated from the value of any "DESCRIPTION" property present in the same component. If no "DESCRIPTION" is present, then the "HASH" parameter MUST NOT be present.

The intent of this property is limited to providing a styled and/or language specific version of the DESCRIPTION property. The URL property should be used to link to websites or other related information.

Applications MAY attempt to guess the media type of the resource via inspection of its content if and only if the media type of the resource is not given by the "FMTTYPE" parameter. If the media type remains unknown, calendar applications SHOULD treat it as type "text/html".

Multiple STYLED-DESCRIPTION properties may be used to provide different formats or different language variants. The GROUP parameter may be used to relate members of the group This is useful for VJOURNAL for example which allows multiple, unrelated, DESCRIPTION properties.

Format Definition:

This property is defined by the following notation:

```
  styleddescription = "STYLED-DESCRIPTION" styleddescparam ":"
                      (
                        ";" "VALUE" "=" "URI"
                        ":" uri)  /
                      (
                      (
                        ";" "VALUE" "=" "TEXT"
                        ":" text
                      )
                      CRLF

  styleddescparam   = *(
                  ;
                  ; The following are OPTIONAL,
                  ; but MUST NOT occur more than once.
                  ;
                  (";" altrepparam) / (";" languageparam) /
                  (";" fmttypeparam) / (";" hashparam) /
                  (";" groupparam) /

                  ; the following is OPTIONAL
                  ; and MAY occur more than once

                  (";" other-param)
```

Example:

The following is an example of this property. It points to an html description.

```
       STYLED-DESCRIPTION;VALUE=URI:http://example.org/desc001.html
```

6.3. Structured-Location

Property name: STRUCTURED-LOCATION

Purpose: This property provides a typed reference to external information about the location of an event or optionally a plain text typed value.

Value type: There is no default value type for this property. The value type can be set to URI or TEXT. Other text-based value types

Property Parameters: IANA, non-standard, label, loctype or format type parameters can be specified on this property.

Conformance: This property MAY be specified zero or more times in any iCalendar component.

Description: When used in a component the value of this property provides information about the event venue or of related services such as parking, dining, stations etc..

When a LABEL parameter is supplied the language of the label must match that of the content and of the LANGUAGE parameter if present.

Format Definition:

This property is defined by the following notation:

```
  strucloc        = "STRUCTURED-LOCATION" struclocparam
                    (
                      ";" "VALUE" "=" "URI"
                      ":" uri)  /
                    (
                    (
                      ";" "VALUE" "=" "TEXT"
                      ":" text
                    )
                    CRLF

  struclocparam   = *(

                  ; the following are OPTIONAL
                  ; but MUST NOT occur more than once

                  (";" fmttypeparam) /
                  (";" labelparam) /
                  (";" languageparam) /
                  (";" loctypeparam) /
                  (";" groupparam) /

                  ; the following is OPTIONAL
                  ; and MAY occur more than once

                  (";" other-param)

                  )
```

Example:

The following is an example of this property. It points to a venue.

```
STRUCTURED-LOCATION;LABEL="The venue":
  http://dir.example.com/venues/big-hall.vcf
```

6.4. Structured-Resource

Property name: STRUCTURED-RESOURCE

Purpose: This property provides a typed reference to external information about a resource or optionally a plain text typed value.

Value type: The default value type for this property is URI. The value type can also be set to TEXT to indicate plain text content.

Property Parameters: IANA, non-standard, label, restype or format type parameters can be specified on this property.

Conformance: This property MAY be specified zero or more times in any iCalendar component.

Description: When used in a component the value of this property provides information about resources used for the event.

When a LABEL parameter is supplied the language of the label must match that of the content and of the LANGUAGE parameter if present.

Format Definition:

This property is defined by the following notation:

```
  strucres       = "STRUCTURED-LOCATION" strucresparam (":" uri)  /
                   (
                     ";" "VALUE" "=" "TEXT"
                     ":" text
                   )
                   CRLF

  strucresparam  = *(

                   ; the following are OPTIONAL
                   ; but MUST NOT occur more than once

                   (";" fmttypeparam) /
                   (";" labelparam) /
                   (";" languageparam) /
                   (";" restypeparam) /
                   (";" groupparam) /

                   ; the following is OPTIONAL
                   ; and MAY occur more than once

                   (";" other-param)

                   )
```

Example:

The following is an example of this property. It refers to a projector.

```
                  STRUCTURED-RESOURCE;restype="projector":
                    http://dir.example.com/projectors/3d.vcf
```

7. Associate Types

This section describes types of association and provide registered values for the ASSOCIATE property ASSOCTYPE parameter.

ACTIVE: An associate taking an active role - for example a team member.

INACTIVE: An associate taking an inactive part - for example an audience member.

SPONSOR: A sponsor of the event. The ORDER parameter may be used with this associate type to define the relative order of multiple sponsors.

CONTACT: Contact information for the event. The ORDER parameter may be used with this associate type to define the relative order of multiple contacts.

BOOKING-CONTACT: Contact information for reservations or payment

EMERGENCY-CONTACT: Contact in case of emergency

PUBLICITY-CONTACT: Contact for publicity

PLANNER-CONTACT: Contact for the event planner or organizer

PERFORMER: A performer - for example the soloist or the accompanist. The ORDER parameter may be used with this associate type to define the relative order of multiple sponsors. For example, ORDER=1 could define the principal performer or soloist.

SPEAKER: Speaker at an event

8. Extended examples

The following are some examples of the use of the properties defined in this specification. They include additional properties defined in [I-D.daboo-icalendar-extensions] which includes IMAGE and LIVEFEED.

8.1. Example 1

The following is an example of a VEVENT describing a concert. It includes location information for the venue itself as well as references to parking and restaurants.

```
BEGIN:VEVENT
CREATED:20101116T145739Z
DESCRIPTION: Piano Sonata No 3\n
 Piano Sonata No 30
DTSTAMP:20101116T145739Z
DTSTART;TZID=America/New_York:20110315T150000Z
DTEND;TZID=America/New_York:20110315T163000Z
LAST-MODIFIED:20101116T145739Z
SUMMARY:Beethoven Piano Sonatas
UID:123456
STRUCTURED-LOCATION;LABEL="The venue":
 http://dir.example.com/venues/big-hall.vcf
STRUCTURED-LOCATION;LABEL="The venue":
 http://dir.example.com/venues/parking.vcf
ASSOCIATE;ASSOCTYPE=SPONSOR:http://example.com/sponsor.vcf
ASSOCIATE;ASSOCTYPE=PERFORMER:
 http://www.example.com/people/johndoe.vcf
END:VEVENT
```

9. Security Considerations

Applications using these property need to be aware of the risks entailed in using the URIs provided as values. See [RFC3986] for a discussion of the security considerations relating to URIs.

10. IANA Considerations

10.1. Property Registrations

This document defines the following new iCalendar properties to be added to the registry defined in Section 8.2.3 of [RFC5545]:

Property	Status	Reference
ASSOCIATE	Current	RFCXXXX, Section 6.1
STYLED-DESCRIPTION	Current	RFCXXXX, Section 6.2
STRUCTURED-LOCATION	Current	RFCXXXX, Section 6.3
STRUCTURED-RESOURCE	Current	RFCXXXX, Section 6.4

10.2. Parameter Registrations

This document defines the following new iCalendar property parameters to be added to the registry defined in Section 8.2.4 of [RFC5545]:

Property Parameter	Status	Reference
ASSOCTYPE	Current	RFCXXXX, Section 5.4
GROUP	Current	RFCXXXX, Section 5.2
HASH	Current	RFCXXXX, Section 5.1
LABEL	Current	RFCXXXX, Section 5.7
LOCTYPE	Current	RFCXXXX, Section 5.3
ORDER	Current	RFCXXXX, Section 5.6
RESTYPE	Current	RFCXXXX, Section 5.5

10.3. Associate Type Registrations

The following table has been used to initialize the associate types registry.

Associate Type	Status	Reference
ACTIVE	Current	RFCXXXX, Section 7
INACTIVE	Current	RFCXXXX, Section 7
SPONSOR	Current	RFCXXXX, Section 7
CONTACT	Current	RFCXXXX, Section 7
BOOKING-CONTACT	Current	RFCXXXX, Section 7
EMERGENCY-CONTACT	Current	RFCXXXX, Section 7
PUBLICITY-CONTACT	Current	RFCXXXX, Section 7
PLANNER-CONTACT	Current	RFCXXXX, Section 7
PERFORMER	Current	RFCXXXX, Section 7
SPEAKER	Current	RFCXXXX, Section 7

11. Acknowledgements

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Cyrus Daboo, John Haug, Dan Mendell, Scott Otis,

The authors would also like to thank the Calendaring and Scheduling Consortium for advice with this specification.

12. Normative References

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Sperberg-McQueen, C., Paoli, J., Maler, E., Yergeau, F., and T. Bray, "Extensible Markup Language (XML) 1.0 (Fourth Edition)", World Wide Web Consortium FirstEdition REC-xml-20060816, August 2006, <http://www.w3.org/TR/2006/REC-xml-20060816>.

Appendix A. Open issues

restype values: Need to determine what if nay registry of resource tyes already exists and use that.

Appendix B. Change log

v04 2014-02-01 MD

- Added updates attribute.

- Minor typos.
- Resubmitted mostly to refresh the draft.

v03 2013-03-06 MD

- Replace PARTICIPANT with ASSOCIATE plus related changes.
- Added section showing modifications to components.
- Replace ID with GROUP and modify HASH.
- Replace TITLE param with LABEL.
- Fixed STYLED-DESCRIPTION in various ways, correct example.

v02 2012-11-02 MD

- Collapse sections with description of properties and the use cases into a section with sub-sections.
- New section to describe relating properties.
- Remove idref and upgrade hash to have the reference
- No default value types on properties..

v01 2012-10-18 MD Many changes.

- SPONSOR and STRUCTURED-CONTACT are now in PARTICIPANT
- Add a STRUCTURED-RESOURCE property
- STYLED-DESCRIPTION to handle rich text
- Much more...

2011-01-07

- Remove MEDIA - it’s going in the Cyrus RFC
- Rename EXTENDED-... to STRUCTURED-...
- Add TYPE parameter to SPONSOR

v00 2007-10-19 MD Initial version

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