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M. Douglass  
RPI  
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Event Publishing Extensions to Icalendar  
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Abstract

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

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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 that such information can be automatically discovered and used by clients. 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 participants in the event, for example a school sports team, and the inactive participants, 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.

Having located such a property, e.g. STRUCTURED-LOCATION with TYPE=PARKING, the client can use http GET on the supplied URL perhaps with an ACCEPT header set to specify the desired format. The targeted server SHOULD respond with a 406 if the resource is not available in the desired format(s).

### 3. 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.

#### 3.1. Piano Concert Performance

In putting together a concert there are many participants: 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 a PARTICIPANT 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.

#### 3.2. Itineraries

These properties also provide opportunities for the travel industry. When booking a flight the SPONSOR 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.

#### 4. New Property Parameters

##### 4.1. Hash

Parameter name: HASH

Purpose: To specify a hash of the value of another property.

Format Definition:

This parameter is defined by the following notation:

```
hashparam      = "HASH" "=" DQUOTE text "/" text DQUOTE
```

Description: This parameter can be specified on properties that are variants of another property and is used to detect changes in that property to enable the values of all variants to be kept synchronized. Each property that uses the "HASH" parameter MUST define which other property the "HASH" is calculated from.

The text value should be the hash value (encoded as a hexadecimal string) followed by a single "/", 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.

Example:

```
STYLED-DESCRIPTION;HASH="699EAEE6CDB049F8B  
E9E3329AAC2415A/SHA-1":Some Text
```

##### 4.2. Id

Parameter name: ID

Purpose: To uniquely identify a property.

Format Definition:

This parameter is defined by the following notation:

```
idparam        = "ID" "=" param-value
```

Description: This parameter can be specified on any property. It is used to uniquely identify the property so it can be related to other properties that specify an "IDREF" parameter whose value matches the "ID" value. Properties within the same component MUST NOT have an "ID" parameter with the same value.

Example:

```
DESCRIPTION;ID=2:Some Text
STYLED-DESCRIPTION;ID=3;IDREF=2:Other Text
```

#### 4.3. Idref

Parameter name: IDREF

Purpose: To relate one property to another.

Format Definition:

This parameter is defined by the following notation:

```
idrefparam = "IDREF" "=" param-value ; ??? multi-valued
```

Description: This parameter can be specified on any property. It is used to uniquely relate one property to another. The value of the "IDREF" parameter is set to the value of the "ID" parameter on the property to which it is being related.

Example:

```
DESCRIPTION;ID=2:Some Text
STYLED-DESCRIPTION;IDREF=2:Other Text
```

#### 4.4. Loctype

Parameter name: LOCTYPE

Purpose: To specify the type of location.

Format Definition:

This parameter is defined by the following notation:

```
loctypeparam = "LOCTYPE" "=" text
```

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 [RFC5545]. New location types SHOULD be registered in the manner laid down in that specification

#### 4.5. Parttype

Parameter name: PARTTYPE

Purpose: To specify the type of participant.

Format Definition:

This parameter is defined by the following notation:

```
parttypeparam = "PARTTYPE" "=" text
```

Description: This parameter MAY be specified on the PARTICIPANT property, and defines the type of participation. Allowable values are defined in Section 6.

#### 4.6. Restype

Parameter name: RESTYPE

Purpose: To specify the type of resource.

Format Definition:

This parameter is defined by the following notation:

```
restypeparam = "RESTYPE" "=" text
```

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

#### 4.7. Order

Parameter name: ORDER

Purpose: To define ordering for the associated property.

Format Definition:

This parameter is defined by the following notation:

```
orderparam      = "ORDER" "=" (1*2DIGIT / "10")  
                  ; An integer between 1 and 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.

#### 4.8. Title

Parameter name: TITLE

Purpose: To provide a human readable title.

Format Definition:

This parameter is defined by the following notation:

```
titleparam      = "TITLE" "=" text
```

Description: This parameter MAY be specified on all properties defined in this specification, and provides a human readable label, perhaps for icons or links..



## 5. New Properties

### 5.1. Participant

Property name: PARTICIPANT

Purpose: This property provides a typed reference to external information about participants 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, title, parttype, 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 participant. This is NOT an attendee in a scheduling sense and the ATTENDEE property may in fact be specified in addition. Participants 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:

```

participant      = "PARTICIPANT" partparam (":" uri) /
                  (
                    ";" "VALUE" "=" "TEXT"
                    ":" text
                  )
                  CRLF

partparam        = *(
                    ; the following are OPTIONAL
                    ; but MUST NOT occur more than once

                    (";" fmttypeparam) /
                    (";" titleparam) /
                    (";" orderparam) /
                    (";" parttypeparam) /

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

                    (";" other-param)

                  )

```

Note: When the ORDER parameter is supplied it defines the ordering of PARTICIPANT 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 participant.

```

PARTICIPANT;PARTTYPE=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.

```

PARTICIPANT;FMPTYPE=text/vcard;
  PARTTYPE=PRIMARY-CONTACT;TITLE=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.

```
PARTICIPANT;FMTTYPE=text/vcard;  
PARTTYPE=PLANNER-CONTACT;TITLE=ClownsIsUs:  
http://dir.example.com/vcard/clowns-is-us.vcf
```

## 5.2. Styled-Description

Property name: STYLED-DESCRIPTION

Purpose: This property provides a more complete description of the calendar component than that provided by the "SUMMARY" property.

Value type: The default value type for this property is TEXT. The value type can also be set to URI. 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, idref, 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 html variants of the plain-text DESCRIPTION property.

VALUE=URI is used to provide a link to html 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 version of the DESCRIPTION property. The URL property should be used to link to websites or other related information.

#### Format Definition:

This property is defined by the following notation:

```
styleddescription = "STYLED-DESCRIPTION" styleddescparam ":"
                    text CRLF
```

```
styleddescparam   = *(
    ;
    ; The following are OPTIONAL,
    ; but MUST NOT occur more than once.
    ;
    (";" altrepparam) / (";" languageparam) /
    (";" hashparam) / (";" idparam) / (";" idrefparam) /
    ;
    ; The following is OPTIONAL,
    ; and MAY occur more than once.
    ;
    (";" valueparam)
    ; The value of this parameter MUST match the type of
    ; data supplied in the value of the property
```

#### Example:

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

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

### 5.3. 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: 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, title, 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..

Format Definition:

This property is defined by the following notation:

```

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

strucloccparam = *(
                  ; the following are OPTIONAL
                  ; but MUST NOT occur more than once

                  (";" fmttypeparam) /
                  (";" titleparam) /
                  (";" loctypeparam) /

                  ; 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;TITLE="The venue":
  http://dir.example.com/venues/big-hall.vcf

```

#### 5.4. 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, title, 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.

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) /
                (";" titleparam) /
                (";" restypeparam) /

                ; 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
```

## 6. Participant Types

This section describes types of participation and provide registered values for the PARTICPANT property TYPE parameter.

**ACTIVE:** A participant taking an active role - for example a team member.

**INACTIVE:** A participant taking an inactive part - for example an audience member.

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

**CONTACT:** Contact information for the event. The ORDER parameter may be used with this participant 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 participant 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

## 7. 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.

### 7.1. 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;TITLE="The venue":
  http://dir.example.com/venues/big-hall.vcf
STRUCTURED-LOCATION;TITLE="The venue":
  http://dir.example.com/venues/parking.vcf
PARTICIPANT;PARTTYPE=SPONSOR:http://example.com/sponsor.vcf
PARTICIPANT;PARTTYPE=PERFORMER:
  http://www.example.com/people/johndoe.vcf
END:VEVENT
```

## 8. 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.

## 9. IANA Considerations

### 9.1. 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
PARTICIPANT	Current	RFCXXXX, Section 5.1
STYLED-DESCRIPTION	Current	RFCXXXX, Section 5.2
STRUCTURED-LOCATION	Current	RFCXXXX, Section 5.3
STRUCTURED-RESOURCE	Current	RFCXXXX, Section 5.4

## 9.2. 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
HASH	Current	RFCXXXX, Section 4.1
ID	Current	RFCXXXX, Section 4.2
IDREF	Current	RFCXXXX, Section 4.3
LOCTYPE	Current	RFCXXXX, Section 4.4
PARTTYPE	Current	RFCXXXX, Section 4.5
RESTYPE	Current	RFCXXXX, Section 4.6
ORDER	Current	RFCXXXX, Section 4.7
TITLE	Current	RFCXXXX, Section 4.8

## 9.3. Participant Type Registrations

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

Participant Type	Status	Reference
ACTIVE	Current	RFCXXXX, Section 6
INACTIVE	Current	RFCXXXX, Section 6
SPONSOR	Current	RFCXXXX, Section 6
CONTACT	Current	RFCXXXX, Section 6
BOOKING-CONTACT	Current	RFCXXXX, Section 6
EMERGENCY-CONTACT	Current	RFCXXXX, Section 6
PUBLICITY-CONTACT	Current	RFCXXXX, Section 6
PLANNER-CONTACT	Current	RFCXXXX, Section 6
PERFORMER	Current	RFCXXXX, Section 6
SPEAKER	Current	RFCXXXX, Section 6

## 10. 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.

## 11. Normative References

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## Appendix A. Change log

v01 2012-10-18 MD Many changes.

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

2011-01-07

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

v00 2007-10-19 MD Initial version

## Author's Address

Michael Douglass  
Rensselaer Polytechnic Institute  
110 8th Street  
Troy, NY 12180  
USA

Email: [douglm@rpi.edu](mailto:douglm@rpi.edu)  
URI: <http://www.rpi.edu/>