



BRAIN QUICK SOFTWARE EVENT FILE DESCRIPTION

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INTRODUCTION

This is a description of the Micromed External Event File used by Brain Quick Software for store Event Markers.

EVENT FILE DEFINITION

An event is an object timely related to an instant or a portion of the EEG and used to identity patient and/or signal activity. Events are grouped on different category (General, HFO, Sleep,..) and subcategory (Scoring,..).

Below is reported the XML event file data structure to fill in order to import external events on Micromed BRAIN QUICK SOFTWARE application.

The EventFile should be defined with a header containing a unique Guid, the CreationDate and Version= "1.00":

<EventFile Version="1.00" CreationDate="2016-06-13T11:39:20.7688547Z" Guid="991611e0-698a-4214-8c2a-e66b6dc78cb0">

The XML event file is divided in two main sections:

1. EventTypes (description of the events name and property listed on the file)
2. Events (list of the events)

EVENT TYPE SECTION DEFINITION

This section reports the external event definition in which each event is defined from its: Category, SubCategory and properties.

The tree structure reported on the table show an example of "External Events 1 definition".

More events are managed and more rows will be added on the **Definition** level.

Each event defined has its own GUID

Category:

```
1 <?xml version="1.0" encoding="utf-8"?>
2 <EventFile Guid="991611e0-698a-4214-8c2a-e66b6dc78cb0" CreationDate="2016-06-13T11:39:20.7688547Z" Version="1.00">
3   <EventTypes>
4     <Category Name="HFO">
5       <Description>HFO Category</Description>
6       <IsPredefined>true</IsPredefined>
7       <Guid>27e2727f-e49d-4113-aa8c-4944ef8f2588</Guid>
8       <SubCategory Name="HFO">
9         <Description>HFO SubCategory</Description>
10        <IsPredefined>false</IsPredefined>
11        <Guid>27e2727f-e49d-4113-aa8c-4944ef8f2588</Guid>
12      </SubCategory>
13    </Category>
14  </EventTypes>
15  <Events>
16    <Event>
17      <Category>HFO</Category>
18      <SubCategory>HFO</SubCategory>
19      <Guid>27e2727f-e49d-4113-aa8c-4944ef8f2588</Guid>
20      <CreationDate>2016-06-13T11:39:20.7688547Z</CreationDate>
21      <Version>1.00</Version>
22      <Description>HFO Event</Description>
23      <IsPredefined>false</IsPredefined>
24      <IsScoring>false</IsScoring>
25      <IsSleep>false</IsSleep>
26      <IsGeneral>false</IsGeneral>
27      <IsHFO>true</IsHFO>
28      <IsSleep>false</IsSleep>
29      <IsGeneral>false</IsGeneral>
30      <IsHFO>true</IsHFO>
31      <IsSleep>false</IsSleep>
32      <IsGeneral>false</IsGeneral>
33      <IsHFO>true</IsHFO>
34      <IsSleep>false</IsSleep>
35      <IsGeneral>false</IsGeneral>
36      <IsHFO>true</IsHFO>
37      <IsSleep>false</IsSleep>
38      <IsGeneral>false</IsGeneral>
39      <IsHFO>true</IsHFO>
40      <IsSleep>false</IsSleep>
41      <IsGeneral>false</IsGeneral>
42      <IsHFO>true</IsHFO>
43      <IsSleep>false</IsSleep>
44      <IsGeneral>false</IsGeneral>
45      <IsHFO>true</IsHFO>
46      <IsSleep>false</IsSleep>
47      <IsGeneral>false</IsGeneral>
48      <IsHFO>true</IsHFO>
49      <IsSleep>false</IsSleep>
50      <IsGeneral>false</IsGeneral>
51      <IsHFO>true</IsHFO>
52      <IsSleep>false</IsSleep>
53      <IsGeneral>false</IsGeneral>
54      <IsHFO>true</IsHFO>
55      <IsSleep>false</IsSleep>
56      <IsGeneral>false</IsGeneral>
57      <IsHFO>true</IsHFO>
58      <IsSleep>false</IsSleep>
59      <IsGeneral>false</IsGeneral>
60      <IsHFO>true</IsHFO>
61    </Event>
62  </Events>
63 </EventFile>
```

Category is defined as "External" and by the following fields:

Description: description of Category

IsPredefined: if it is an events predefined by Micromed

Guid: unique

Subcategory:

```
1 <?xml version="1.0" encoding="utf-8"?>
2 <EventFile Guid="991611e0-698a-4214-8c2a-e66b6dc78cb0" CreationDate="2016-06-13T11:39:20.7688547Z" Version="1.00">
3   <EventTypes>
4     <Category Name="HFO">
5       <Description>HFO Category</Description>
6       <IsPredefined>true</IsPredefined>
7       <Guid>27e2727f-e49d-4113-aa8c-4944ef8f2588</Guid>
8     <SubCategory Name="HFO">
9       <Description>HFO Subcategory</Description>
10      <IsPredefined>true</IsPredefined>
11      <Guid>c142e214-826e-4dfe-965a-110246492c9e</Guid>
12      <Definition Name="HFO Gamma">
13        <Description>HFO Gamma</Description>
14        <IsPredefined>true</IsPredefined>
15        <IsDefinitionAdjustable>false</IsDefinitionAdjustable>
16        <CanInsert>true</CanInsert>
17        <CanDelete>true</CanDelete>
18        <CanUpdateText>true</CanUpdateText>
19        <CanUpdatePosition>true</CanUpdatePosition>
20        <CanReassign>false</CanReassign>
21        <InsertionType>ClickAndDrag</InsertionType>
22        <FixedInsertionDuration>PT1S</FixedInsertionDuration>
23        <TextType>FromDefinitionDescription</TextType>
24        <ReferenceType>SingleLine</ReferenceType>
25        <DurationType>Interval</DurationType>
26        <TextArgbColor>4294901760</TextArgbColor>
27        <GraphicArgbColor>805371903</GraphicArgbColor>
28        <GraphicType>FillRectangle</GraphicType>
29        <VisualizationType>Graphic</VisualizationType>
30        <FontFamily>Segoe UI</FontFamily>
31        <FontSize>11</FontSize>
32        <FontItalic>false</FontItalic>
33        <FontBold>false</FontBold>
34      </Definition>
35    </SubCategory>
36  </Category>
37 </EventTypes>
38 </EventFile>
```

SubCategory is defined with a name to choose or with the project name and by the following fields:

Description: description of SubCategory

IsPredefined: if it is an events predefined by Micromed

Guid: unique

Definition:

```
1 <?xml version="1.0" encoding="utf-8"?>
2 <EventFile Guid="991611e0-698a-4214-8c2a-e66b6dc78cb0" CreationDate="2016-06-13T11:39:20.7688547Z" Version="1.00">
3   <EventTypes>
4     <Category Name="HFO">
5       <Description>HFO Category</Description>
6       <IsPredefined>true</IsPredefined>
7       <Guid>27e2727f-e49d-4113-aa8c-4944ef8f2588</Guid>
8     <SubCategory Name="HFO">
9       <Description>HFO Subcategory</Description>
10      <IsPredefined>true</IsPredefined>
11      <Guid>c142e214-826e-4dfe-965a-110246492c9e</Guid>
12      <Definition Name="HFO Gamma">
13        <Guid>4fd4b81d-3584-47f9-96ab-dcf3daf92e68</Guid>
14        <Description>G</Description>
15        <IsPredefined>true</IsPredefined>
16        <IsDefinitionAdjustable>false</IsDefinitionAdjustable>
17        <CanInsert>true</CanInsert>
18        <CanDelete>true</CanDelete>
19        <CanUpdateText>true</CanUpdateText>
20        <CanUpdatePosition>true</CanUpdatePosition>
21        <CanReassign>false</CanReassign>
22        <InsertionType>ClickAndDrag</InsertionType>
23        <FixedInsertionDuration>PT1S</FixedInsertionDuration>
24        <TextType>FromDefinitionDescription</TextType>
25        <ReferenceType>SingleLine</ReferenceType>
26        <DurationType>Interval</DurationType>
27        <TextArgbColor>4294901760</TextArgbColor>
28        <GraphicArgbColor>805371903</GraphicArgbColor>
29        <GraphicType>FillRectangle</GraphicType>
30        <VisualizationType>Graphic</VisualizationType>
31        <FontFamily>Segoe UI</FontFamily>
32        <FontSize>11</FontSize>
33        <FontItalic>false</FontItalic>
34        <FontBold>false</FontBold>
35      </Definition>
36    <Definition Name="HFO Spike">
37      <Guid>bf513752-2cb7-43bc-93f5-370def800b93</Guid>
38      <Description>S</Description>
39      <IsPredefined>true</IsPredefined>
40      <IsDefinitionAdjustable>false</IsDefinitionAdjustable>
41      <CanInsert>true</CanInsert>
42      <CanDelete>true</CanDelete>
43      <CanUpdateText>true</CanUpdateText>
44      <CanUpdatePosition>true</CanUpdatePosition>
45      <CanReassign>false</CanReassign>
46      <InsertionType>ClickAndDrag</InsertionType>
47      <FixedInsertionDuration>PT1S</FixedInsertionDuration>
48      <TextType>FromDefinitionDescription</TextType>
49      <ReferenceType>SingleLine</ReferenceType>
50      <DurationType>Interval</DurationType>
51      <TextArgbColor>4294901760</TextArgbColor>
52      <GraphicArgbColor>805371903</GraphicArgbColor>
53      <GraphicType>FillRectangle</GraphicType>
54      <VisualizationType>Graphic</VisualizationType>
55      <FontFamily>Segoe UI</FontFamily>
56      <FontSize>11</FontSize>
57      <FontItalic>false</FontItalic>
58      <FontBold>false</FontBold>
59    </Definition>
60  </SubCategory>
61 </Category>
62 </EventTypes>
63 </EventFile>
```

Definition: definition of Event properties. The fields shall be defined in this way:

- **Definition Name**
- **Guid:** unique identifier
- **Description:** description of Event Definition
- **IsPredefined:** if it is an events predefined by Micromed
- **IsDefinitionAdjustable**
- **CanInsert:** allow to define the possibility to add an event or not
- **CanDelete:** allow to define the possibility to delete an event or not
- **CanUpdateText:** allow to define the possibility to modify the text
- **CanUpdatePosition:** allow to define the possibility to move an event
- **CanReassign**
- **InsertionType** could assume the following values:
 - OneClick

- ClickAndDrag
- TwoClicks
- **FixedInsertionDuration:** the duration could be fix or not
- **TextType** could assume the following values:
 - Alphanumeric
 - Numeric
 - Rtf
 - FromDefinitionDescription
- **ReferenceType** could assume the following values:
 - SingleLine=0
 - AllLines
- **DurationType** could assume the following values:
 - ZeroDuration
 - Interval
- **TextArgbColor**
- **GraphicArgbColor**
- **GraphicType:** could assume the following values:
 - Nothing
 - FillRectangle
 - EmptyRectangle
 - Underline
 - VerticalLine
 - VerticalDotLine
- **VisualizationType:** could assume the following values:
 - Text
 - Graphic
 - TextAndGraphic
- **TextPositionType:** could assume the following values:
 - Top
 - Center
 - Bottom
- **FontFamily**
- **FontSize**
- **FontItalic**
- **FoltBold**

EVENTS SECTION DEFINITION

This section reports the list of events.

Each event has its own GUID and it is the related to the definition GUID reported of the EventTypes section. Section Begin and End report the time of the event.

```

1  <?xml version="1.0" encoding="utf-8"?>
2  <EventFile Guid="991611e0-698a-4214-8c2a-e66b6dc78cb0" CreationDate="2016-06-13T11:39:20.7688547Z" Version="1.00">
3    <EventTypes>
63    <Events>
64      <Event Guid="aa489143-78da-448c-9d6d-8ded34fc921c">
77      <Event Guid="d997c59a-5e5c-4285-bd0a-e42d9cbfb77">
90      <Event Guid="f59b85bd-257d-4059-99e9-269ffa3f9e10">
91        <EventDefinitionGuid>4fd4b81d-3584-47f9-96ab-dcf3daf92e68</EventDefinitionGuid>
92        <Begin>2011-10-24T13:39:33.0510000</Begin>
93        <End>2011-10-24T13:40:03.5000000</End>
94        <Value>0</Value>
95        <ExtraValue>0</ExtraValue>
96        <DerivationInvID>1</DerivationInvID>
97        <DerivationNotInvID>8</DerivationNotInvID>
98        <CreatedBy>mi_test</CreatedBy>
99        <CreatedDate>2016-11-02T11:14:51.3330257Z</CreatedDate>
100       <UpdatedBy>mi_test</UpdatedBy>
101       <UpdatedDate>2016-11-02T11:14:51.3330257Z</UpdatedDate>
102     </Event>
103     <Event Guid="dde85c44-80b5-45cd-9a74-b08d224a9bb7">
117     <Event Guid="87693a5e-352a-4290-bf91-d4f51e85b647">
130     <Event Guid="0402d8f2-9a5c-4533-8aed-3b12d596a466">
143     <Event Guid="137a1f45-b5bb-4116-82d3-2c4a46df4e33">
156     <Event Guid="0448576f-8461-4199-a30a-d609069871f2">
169   </Events>
170 </EventFile>

```

The **Event** fields shall be defined in this way:

- **Event Guid:** unique identifier of the event
- **EventDefinitionGuid:** definition guid of the EventTypes
- **Begin:** Event starting time
- **End:** Event ending time
- **Value:** the user can add a value (long), e.g. the search number
- **ExtraValue:** the user can add an extravalue (double), e.g. the accuracy percentage
- **DerivationInvID:** reference to the ID of inverting electrode
- **DerivationNotInvID:** reference to the ID of not inverting electrode
- **CreatedBy:** name of the user that create the event
- **CreatedDate:** date of event creation
- **UpdatedBy:** name of the user that update the event
- **UpdateDate:** date of event update

EXAMPLE OF EVENT FILE

Here examples of HFO Spike and Ripple events definition and events description:

```

<?xml version="1.0" encoding="UTF-8"?>
<EventFile Version="1.00" CreationDate="2016-06-13T11:39:20.7688547Z" Guid="991611e0-698a-4214-8c2a-
e66b6dc78cb0">
  <EventTypes>
    <Category Name="HFO">
      <Description>HFO Category</Description>
      <IsPredefined>true</IsPredefined>
      <Guid>27e2727f-e49d-4113-aa8c-4944ef8f2588</Guid>
      <SubCategory Name="HFO Subcategory">
        <Description>HFO Subcategory</Description>
        <IsPredefined>true</IsPredefined>
        <Guid>c142e214-826e-4dfe-965a-110246492c9e</Guid>
        <Definition Name="Spike">
          <Guid>bf513752-2cb7-43bc-93f5-370def800b93</Guid>
          <Description>HFO Spike Event Definition</Description>
          <IsPredefined>true</IsPredefined>
          <IsDefinitionAdjustable>false</IsDefinitionAdjustable>
          <CanInsert>true</CanInsert>
          <CanDelete>true</CanDelete>
          <CanUpdateText>true</CanUpdateText>
          <CanUpdatePosition>true</CanUpdatePosition>
          <CanReassign>false</CanReassign>
          <InsertionType>ClickAndDrag</InsertionType>
          <FixedInsertionDuration>PT1S</FixedInsertionDuration>

```

```

        <TextType>Nothing</TextType>
        <ReferenceType>AllLines</ReferenceType>
        <DurationType>ZeroDuration</DurationType>
        <UserSharingType>AllUsers</UserSharingType>
        <TextArgbColor>2130706687</TextArgbColor>
        <GraphicArgbColor>2130706687</GraphicArgbColor>
        <GraphicType>FillRectangle</GraphicType>
        <VisualizationType>Graphic</VisualizationType>
        <FontFamily/>
        <FontSize>0</FontSize>
        <FontItalic>>false</FontItalic>
        <FontBold>>false</FontBold>
    </Definition>
    <Definition Name="Ripple">
        <Guid>167b6fad-f95a-4880-a9c6-968f468a1297</Guid>
        <Description>HFO Ripple Event Definition</Description>
        <IsPredefined>>true</IsPredefined>
        <IsDefinitionAdjustable>>false</IsDefinitionAdjustable>
        <CanInsert>>true</CanInsert>
        <CanDelete>>true</CanDelete>
        <CanUpdateText>>true</CanUpdateText>
        <CanUpdatePosition>>true</CanUpdatePosition>
        <CanReassign>>false</CanReassign>
        <InsertionType>ClickAndDrag</InsertionType>
        <FixedInsertionDuration>PT1S</FixedInsertionDuration>
        <TextType>Nothing</TextType>
        <ReferenceType>AllLines</ReferenceType>
        <DurationType>ZeroDuration</DurationType>
        <UserSharingType>AllUsers</UserSharingType>
        <TextArgbColor>2130706687</TextArgbColor>
        <GraphicArgbColor>2130706687</GraphicArgbColor>
        <GraphicType>FillRectangle</GraphicType>
        <VisualizationType>Graphic</VisualizationType>
        <FontFamily/>
        <FontSize>0</FontSize>
        <FontItalic>>false</FontItalic>
        <FontBold>>false</FontBold>
    </Definition>
</SubCategory>
</Category>
</EventTypes>

<Events>
<Event Guid="07e2c5ab-f38f-412c-9cbf-dba4bac7d3e6">
    <EventDefinitionGuid>bf513752-2cb7-43bc-93f5-370def800b93</EventDefinitionGuid>
    <Begin>2007-01-24T10:03:09.7694531Z</Begin>
    <End>2007-01-24T10:03:09.7694531Z</End>
    <Text/>
    <DerivationInvID>2</DerivationInvID>
    <DerivationNotInvID>9</DerivationNotInvID>
    <CreatedBy>User1</CreatedBy>
    <CreateDate>2016-04-24T10:03:08</CreateDate>
    <UpdatedBy>User2</UpdatedBy>
    <UpdateDate>2016-05-20T12:13:01</UpdateDate>
</Event>
</Events>
</EventFile>

```