

TargetTrack Remote Control Interface Document

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October 08, 2015

Revision B

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Introduction

This document defines the interface to Doppler Systems' TargetTrack software that will allow another program to control TargetTrack. A TCP/IP server within TargetTrack and XML messages sent to and received from the server provides this function.

IP Port

The TargetTrack server will monitor a user selectable IP Port set within the TargetTrack software. The default port number will be 10100.

Message Structure

The messages sent to and from the server will consist of a 16 byte header followed by the XML message.

Message Header Structure

Bytes	Definition	Comments
0 – 3	Length of the message including header (little Endian)	
4 – 15	TBD	Reserved for check sum and other information

XML Messages

Client to server message

Status Message

```
<xs:element name="status">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="frequency" type="xs:long"></xs:element>
      <xs:element name="collect" type="xs:boolean"></xs:element>
      <xs:element name="name" type="xs:string"></xs:element>
      <xs:element name="mapupdate" type="xs:boolean"></xs:element>
      <xs:element name="bearingupdate" type="xs:boolean"></xs:element>
    </xs:sequence>
    <xs:attribute name="lang"></xs:attribute>
  </xs:complexType>
</xs:element>
```

The name element will identify the client to TargetTrack. TargetTrack will use this name in the local database to tag the DF intercepts to the client.

The frequency element will command TargetTrack to monitor the commanded frequency when collect is true.

Setting the collect element to true will signal TargetTrack to begin recording data on the commanded frequency.

Setting the mapupdate element to true will cause the server to respond with a jpg image of the map.

Setting the bearingupdate element to true will cause the server to respond with the bearings collected since the last request or the last 10 seconds of bearings whichever is less.

Example

```
<?xml version="1.0"?>
<status xml:lang="EN">
  <collect>false</collect>
  <frequency>162550000</frequency>
  <name>Remotel</name>
  <mapupdate>true</mapupdate>
  <bearingupdate>true</bearingupdate>
</status>
```

Server to Client Message

The server will respond to the client with a status message that contains the same elements as the client to server message with additional elements defining the map and the bearings.

The XML Schema for the server to client message is as follows:

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```
<xs:element name ="status">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="site">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="bearing">
              <xs:complexType>
                <xs:sequence>
                  <xs:element name="value" type="xs:double"></xs:element>
                  <xs:element name ="frequency" type="xs:long"></xs:element>
                  <xs:element name ="location">
                    <xs:complexType>
                      <xs:attribute name="latitude" type ="xs:double"></xs:attribute>
                      <xs:attribute name="longitude" type ="xs:double"></xs:attribute>
                    </xs:complexType>
                  </xs:element>
                </xs:sequence>
              </xs:complexType>
            </xs:element>
            <xs:attribute name="time" use ="required" type="xs:dateTime"></xs:attribute>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:attribute name="siteid" use="required" type="xs:ID"></xs:attribute>
    </xs:complexType>
  </xs:element>
  <xs:element name ="map">
    <xs:complexType>
      <xs:sequence>
        <xs:element name ="upperleft">
          <xs:complexType>
            <xs:attribute name="latitude" type ="xs:double"></xs:attribute>
            <xs:attribute name="longitude" type ="xs:double"></xs:attribute>
          </xs:complexType>
        </xs:element>
        <xs:element name ="lowerright">
          <xs:complexType>
            <xs:attribute name="latitude" type ="xs:double"></xs:attribute>
            <xs:attribute name="longitude" type ="xs:double"></xs:attribute>
          </xs:complexType>
        </xs:element>
        <xs:element name="img" type="xs:string"></xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
```

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```
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:element name="frequency" type="xs:long"></xs:element>
<xs:element name="collect" type="xs:boolean"></xs:element>
<xs:element name="name" type="xs:string"></xs:element>
<xs:element name="mapupdate" type="xs:boolean"></xs:element>
<xs:element name="bearingupdate" type="xs:boolean"></xs:element>
<xs:element name="error" type="xs:string"></xs:element>
</xs:sequence>
<xs:attribute name="lang"></xs:attribute>
</xs:complexType>
</xs:element>
```

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The site element will have a siteid attribute that will identify the site. This is a string with the GUID of the site. There can be multiple sites. The site element has multiple bearing elements.

The bearing element will have a time attribute that will identify the time that the bearing was measured. When a site is collecting data it receives bearings about every 0.5 seconds. The bearing element has a value, a frequency, and a location. An example of the site element is shown below

```
<site siteid="4753f211-a865-4d5d-ac04-b849400f6233">
  <bearing time="2015-10-08T13:16:32.7600034-07:00">
    <value>196.3</value>
    <frequency>162550000</frequency>
    <location latitude="33.822055" longitude="-111.91910833333333" />
  </bearing>
  <bearing time="2015-10-08T13:16:33.2450026-07:00">
    <value>197</value>
    <frequency>162550000</frequency>
    <location latitude="33.822053333333336" longitude="-111.91911166666667" />
  </bearing>
  <bearing time="2015-10-08T13:16:33.7500029-07:00">
    <value>195.8</value>
    <frequency>162550000</frequency>
    <location latitude="33.822053333333336" longitude="-111.91911166666667" />
  </bearing>
  <bearing time="2015-10-08T13:16:34.2550032-07:00">
    <value>195.9</value>
    <frequency>162550000</frequency>
    <location latitude="33.822052" longitude="-111.919113" />
  </bearing>
  <bearing time="2015-10-08T13:16:34.7590034-07:00">
    <value>197.1</value>
    <frequency>162550000</frequency>
    <location latitude="33.822052" longitude="-111.919113" />
  </bearing>
</site>
```

The map element contains the data required to display and calibrate the map. The upperleft element identifies the latitude and longitude of the upperleft corner of the map. The lowerright element identifies the latitude and longitude of the lowerright corner of the map. The img element is a Base64 encoded string of a jpg image of the map. An example of the map element is shown below.

```
<map>
  <upperleft latitude="33.843829479997048" longitude="-111.96407318115234" />
  <lowerright latitude="33.79455567488754" longitude="-111.84245109558106" />
  <img>/9j/4AAQSkZJRgABAQEAYABgAAD/2wBDAAgGBgcGBQgHBwcJCQgKDBQNDAsLDBkSEw8UHRof
  Hh0aHBwgJC4nICIsIxwckDcpLDAxNDQ0Hyc5PTgyPC4zNDL/2wBDAQkJCQwLDBgNDRgyIRwhMj
  IyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjL/wAARCAKzBYkDA
  SIAAhEBAxEB/
  .
  .
  .
  UUUUAFFFFABRRRQB//9k=</img>
</map>
```

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If the client set the collect element to true and another client has control of the server then collect will be set to false when the server responds. If the collect field is false the name returned will be the name of the remote site that has control.

If the TargetTrack user has zoomed or panned the map then the mapupdate element will be set to true indicating to the client that he should request a map update.

If the client is collecting and the bearingupdate element is set to true, this indicates that the server has bearings available to send to the client.