

SUNGUIDE WRONG WAY VEHICLE DETECTION SYSTEM SUPPLEMENTAL REQUIREMENTS

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I PURPOSE

This document defines a generic protocol that sends alerts and images to the SunGuide software without requiring changes to the software for Wrong Way Vehicle Detection System (WWVDS).

II PROTOCOL REQUIREMENTS

Hypertext Transfer Protocol (HTTP) and Hypertext Transfer Protocol Secure (HTTPS) shall be used to determine the following:

- Status of the WWVDS (all locations)
- Asynchronous WWVDS Alert (all locations)
- Sequence of images of the WWVDS event (ramp installations)

A. Status of the WWVDS

The following message is used to retrieve an XML response from the WWVDS:

GET to: [http\[s\]://X.X.X.X/v1/status?=deviceId](http[s]://X.X.X.X/v1/status?=deviceId)

- X.X.X.X will be the IP address (and port info if required) of the device.
- HTTP and HTTPS requests will be supported from the SunGuide side.
- deviceId will be the unique ID of the WWVDS device.

Possible Responses:

HTTP Code: 200 OK (Successful Response)
HTTP Code: 400 Bad Request
HTTP Code: 404 Not Found
HTTP Code: 500 Internal Server Error

Sample XML Response:

```
<status>
  <deviceId>12345</deviceId>
  <deviceStatus>Active</deviceStatus>
  <deviceTimestamp>2021-06-15T13:45:30.0000000-07:00</deviceTimestamp >
</status>
```

Fields:

Content	Data Type	Required?	Value
deviceId	string	yes	Unique ID of the device
deviceStatus	string	yes	Status of the device. Acceptable values include: 1) Active – device is operational, and detection is functional. 2) Error – device detection is non-functional. 3) Out of Service – device detection is intentionally non-functional.
deviceTimestamp	dateTime	yes	Timestamp in the ISO 8601 standard (ex. 2021-06-15T13:45:30.0000000-07:00).

B. Asynchronous WWVDS Alert

When an alert is created, the alert shall be sent to the SunGuide software immediately. The XML formatted alert message shall be posted to the SunGuide web server with the following URL:

POST to: <https://X.X.X.X/v1/alert>

- Where X.X.X.X is the IP address (and port info if required) of the SunGuide web server.
- The vendor shall be capable of supporting HTTP and HTTPS.

Possible Responses:

HTTP Code: 200 OK (Successful Response)
 HTTP Code: 400 Bad Request
 HTTP Code: 500 Internal Server Error

Sample XML Response:

```
<alert>
  <alertId>12345</ alertId >
  <deviceId>67890</deviceId>
  <alertTimestamp>2021-06-15T13:45:30.0000000-07:00</alertTimestamp>
  <imageList>
    <imageLocation>http://X.X.X.X/path/to/image1.jpg</imageLocation>
    <imageLocation>http://X.X.X.X/path/to/image2.jpg</imageLocation>
  </imageList>
</alert>
```

Fields:

Content	Data Type	Required?	Value
alertId	string	yes	A unique alert id for the WWD Alert

Content	Data Type	Required?	Value
deviceId	string	yes	The unique ID of the device that created the alert
alertTimestamp	dateTime	yes	Timestamp in the ISO 8601 standard (ex. 2021-06-15T13:45:30.0000000-07:00).
imageList	List	no	A list of images available at the time of the alert. This is an optional list and includes one-ten images.
imageLocation	string	no	An image URL to download the image.

C. Image Retrieval of the WWVDS Event

A delay in the ability to send images for the alert occurs when the pictures are taken after the alert occurs. This message will be sent multiple times as the images become available to update the alert. They shall be posted to the SunGuide web server with the following URL:

POST to: [http\[s\]://X.X.X.X/v1/update](http[s]://X.X.X.X/v1/update)

- Where X.X.X.X is the IP address (and port info if required) of the SunGuide web server.
- The vendor should be capable of supporting HTTP and HTTPS.

Possible Responses:

HTTP Code: 200 OK (Successful Response)

HTTP Code: 400 Bad Request

HTTP Code: 500 Internal Server Error

Sample XML Response:

```
<update>
  <alertId>12345</ alertId >
  <deviceId>67890</deviceId>
  <updateTimestamp>2021-06-15T13:45:30.0000000-07:00</updateTimestamp>
  <imageList>
    <imageLocation>http://X.X.X.X/path/to/image1.jpg</imageLocation>
    <imageLocation>http://X.X.X.X/path/to/image2.jpg</imageLocation>
  </imageList>
</update>
```

Fields:

Content	Data Type	Required?	Value
alertId	string	yes	A unique alert id for the WWD Alert
deviceId	string	yes	The unique ID of the device that created the alert
updateTimestamp	dateTime	yes	Timestamp in the ISO 8601 standard (ex. 2021-06-15T13:45:30.0000000-07:00).
imageList	List	yes	A list of images available at the time of the update. This is a mandatory list and includes one-ten images.
imageLocation	string	yes	An image URL to download the image.