# Beacons

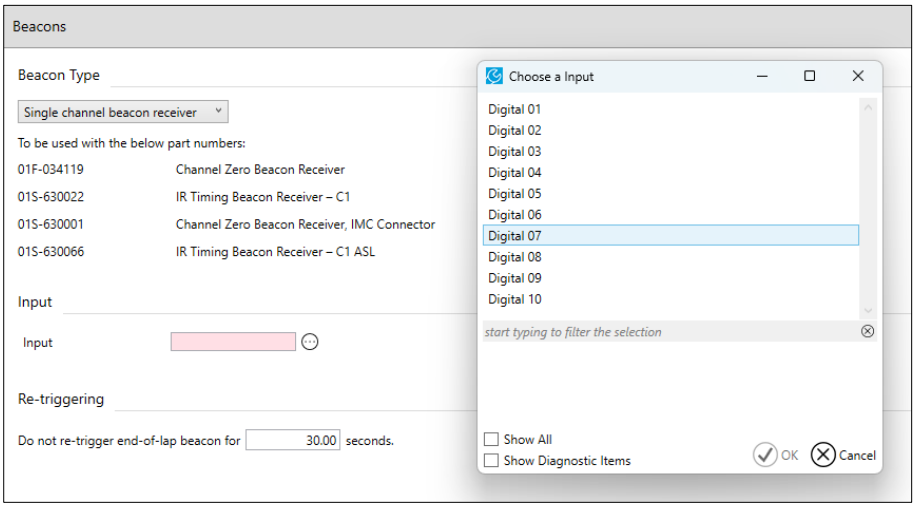
The **Beacons** node is used to configure the end of lap marker. The end of lap marker is used to divide *.pds* data files into laps. The node allows simple integration of a beacon to the setup with high flexibility for a range of multiple beacon types, including infrared beacons, GPS beacons, and virtual beacons:

- Single channel beacon receiver
- 10-channel beacon receiver
- 10-channel ASL beacon receiver
- 32-channel beacon receiver
- GPS beacon receiver
- Virtual beacon receiver

Select a beacon type to display a list of compatible parts. Contact Cosworth Electronics via the **Support** page on Cosworth website or e-mail electronics.support@cosworth.com for copies of individual product information sheets.

## Single channel beacon receiver

A simple digital input beacon set up on the **Hardware Settings** node.




## 10-channel beacon receiver

10-channel receivers allow the flexibility to use up to ten different beacon codes to avoid conflicts with other teams using their own beacon transmitter locations. The 10-channel receiver is set up in the same way as the single channel receiver.

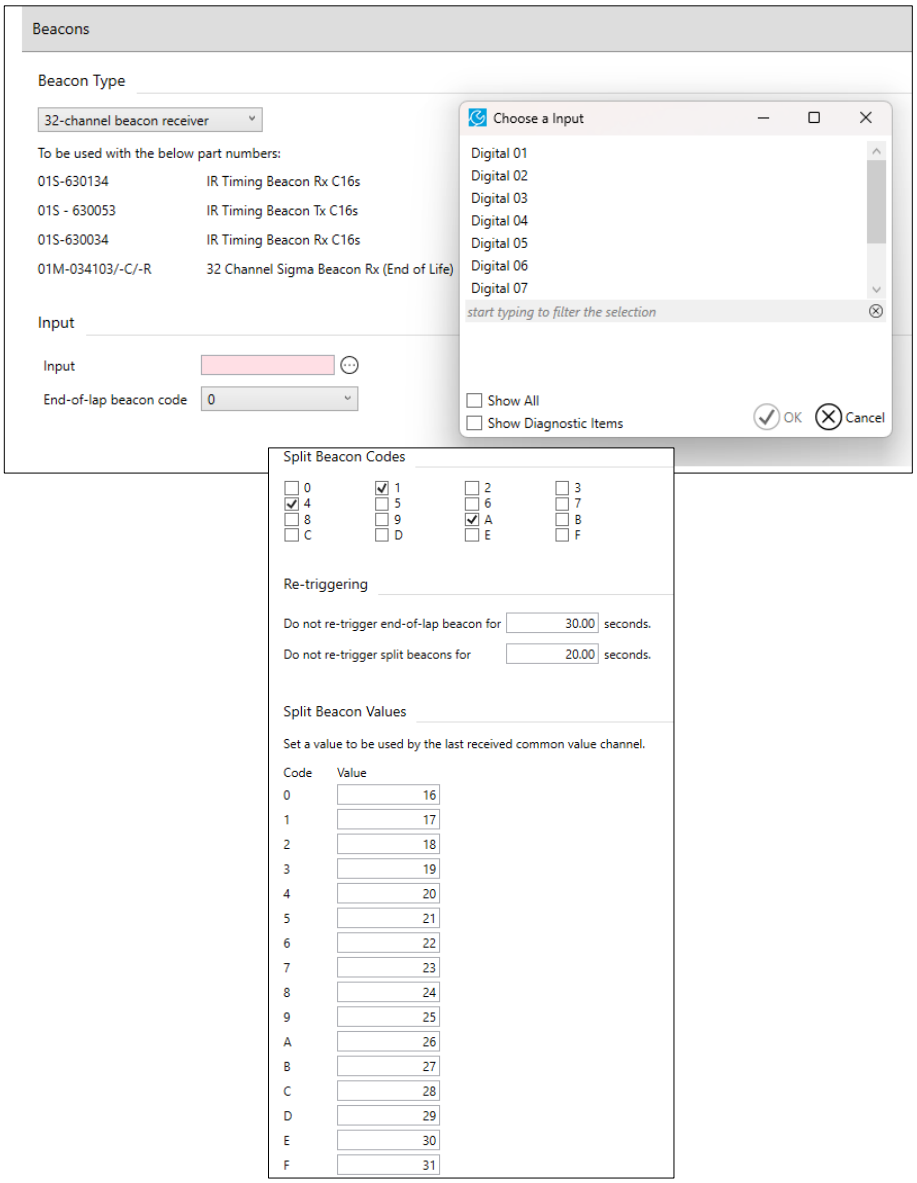
## 10-channel ASL beacon receiver

The 10-channel ASL receiver is like the standard 10-channel beacon receiver, but you can configure the end of lap beacon code in the software.

## 32-channel beacon receiver

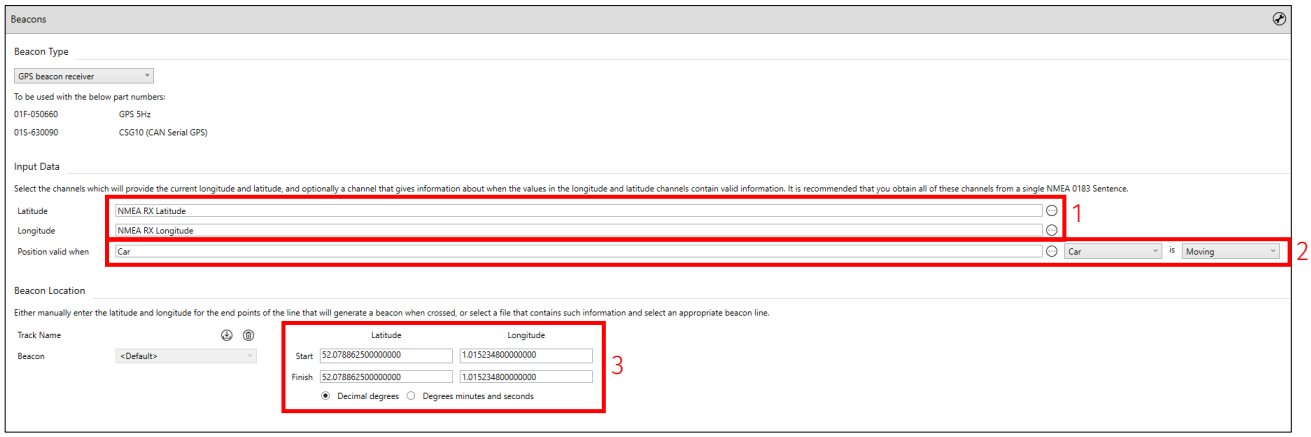
This option allows the flexibility to select from 16 different end of lap beacon codes, to avoid conflicts with other teams using their own beacon transmitter locations, plus provision for up to 16 split beacon codes to calculate accurate split times at multiple points around the track using several C16s split beacons.

## GPS beacon receiver



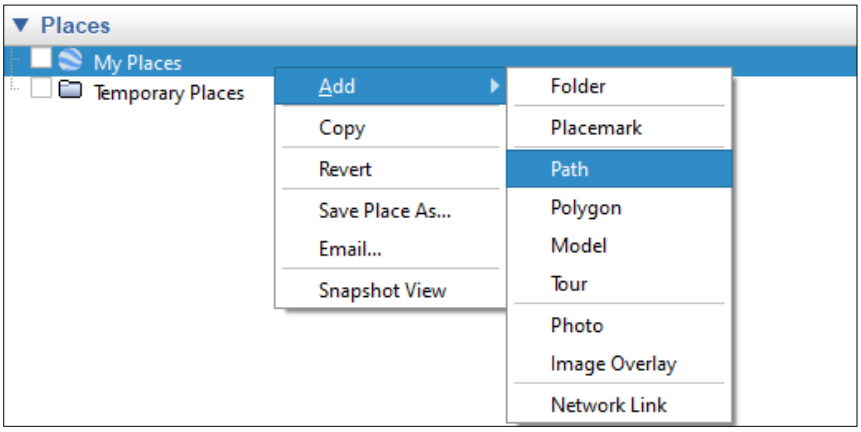
## Standard GPS beacon

A GPS input configured in the **NMEA 0183 Decode** node can be used to configure an end of lap beacon. You can select **Latitude** and **Longitude** channels configured in the **NMEA 0183 Decode** from the browse menu for the **Latitude** and Longitude inputs (1). You must also define a strategy to indicate when the GPS position is valid (2) and enter the coordinates of the beacon location for the start/finish line (3).

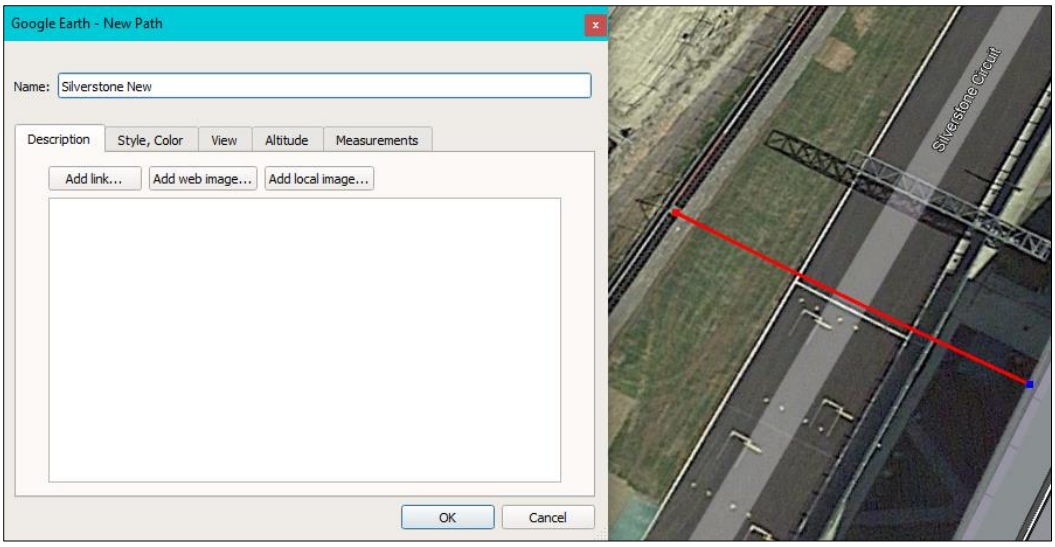



## Create a GPS beacon

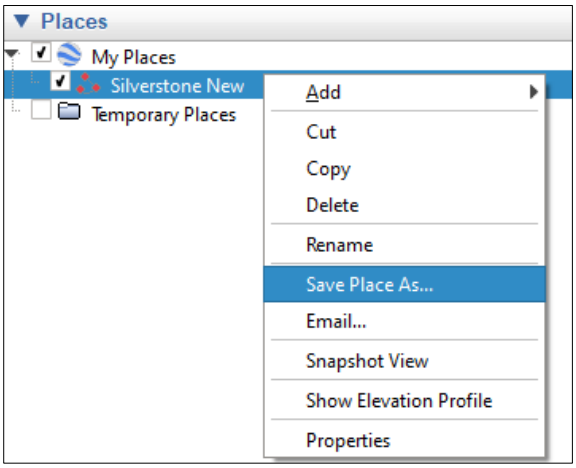
You can also use Google Earth to create a start/finish line to generate beacon events. Open Google Earth, and then right-click on **My Places > Add > Path**.



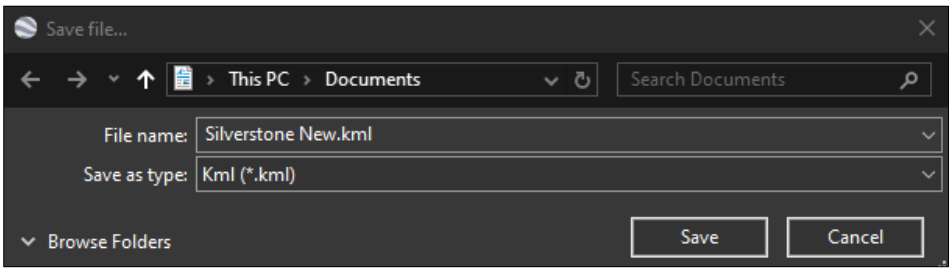

The **Edit Path** window is displayed. Enter a name for the start/finish line, and then use the mouse to draw the start/finish line on the map. This line must cross the track in the required location. A beacon is triggered every time this line is crossed.




When the new start/finish line is created, you must export it. Right-click **Path**, and then **Save Place As...**.

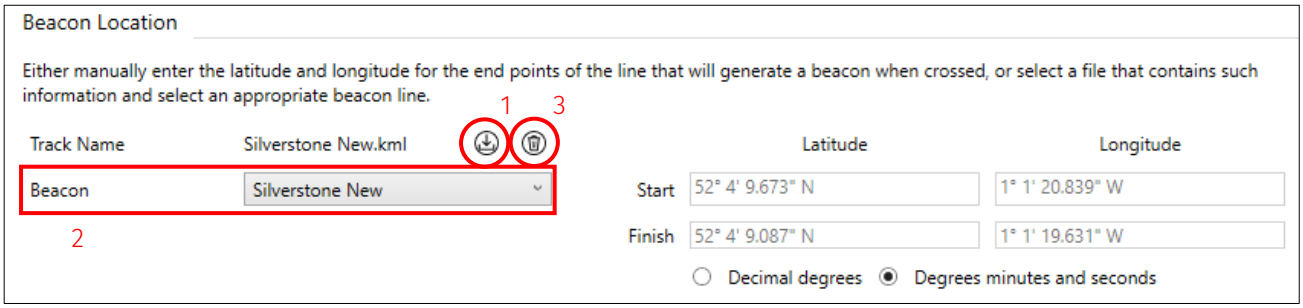



**Note**: Make sure that you select the *Kml (*.kml)* option from the **Save as type** dropdown menu.



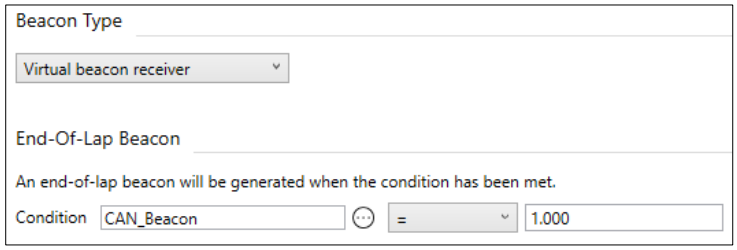
When you select the GPS Beacon Receiver from the **Beacon Type** drop down box in the **Beacons** node you can select the **Latitude** and **Longitude** channels configured from the **NMEA 0183 Decode** option from the browse menu for the Latitude and Longitude inputs (1). The strategy for when the GPS position is valid must also be defined (2).


Import the start/finish line file using the import tool icon (1), and then select the beacon path from the **Beacon** drop down menu (2). You use the 'bin; tool (3) to delete the start/finish line. The start/finish line coordinates are automatically populated from the *.kml* file.




## Virtual beacon receiver

You can configure virtual beacons in Toolset to use a user-defined channel as a beacon input. This could be a Maths, Logic or CAN channels.




## Split beacons

There is also an option to add split beacons to the setup, triggered from a virtual source.