BEACONS Revision 0.59 Date 17/02/2025			
DEAUUN3 Date 17/02/2025	REACONS	Revision	0.59
	DEAUUNJ	Date	17/02/2025

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 <u>electronics.support@cosworth.com</u> for copies of individual product information sheets.

Single channel beacon receiver

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

Beacon Type		Choose a Input	-	×
Single channel beac To be used with the l 01F-034119 01S-630022 01S-630001 01S-630066 Input	oon receiver Y pelow part numbers: Channel Zero Beacon Receiver IR Timing Beacon Receiver – C1 Channel Zero Beacon Receiver, IMC Connector IR Timing Beacon Receiver – C1 ASL	Digital 01 Digital 02 Digital 03 Digital 04 Digital 05 Digital 05 Digital 06 Digital 07 Digital 09 Digital 09 Digital 10		
Input		start typing to filter the selection		8
Re-triggering				

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

Beacon Type				
32-channel beacon rece	eiver Y		Choose a Input	- 🗆 X
To be used with the belo 01S-630134 01S - 630053 01S-630034 01M-034103/-C/-R	w part numbers: IR Timing Beacon R IR Timing Beacon T IR Timing Beacon R 32 Channel Sigma B	x C16s x C16s x C16s Geacon Rx (End of Life)	Digital 01 Digital 02 Digital 03 Digital 04 Digital 05 Digital 06 Digital 07 start typing to filter the selection	~ ~ &
Input End-of-lap beacon code	. 0	· · ·	Show All Show Diagnostic Items	✓ OK ⊗ Cance
	□ 0 4 8 C C Re-trig Do not Do not Do not Do not Code 0 1 2 3 4 5 6 7 8 9 A B C	✓ 1 5 9 9 0 D 0 re-trigger end-of-lap be re-trigger split beacons I Beacon Values alue to be used by the last Value 16 177 18 199 200 21 22 23 24 25 26 27 28	□ 2 3 □ 6 0 □ A B □ C F acon for 30.00 seconds. for 20.00 seconds. st received common value channel. seconds.	



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).

Beacons			Ø
Beacon Type			
GPS beacon receiver	*		
To be used with the below	w part numbers:		
01F-050660	GPS 5Hz		
015-630090	CSG10 (CAN Serial GPS)		
Input Data			
Select the channels which	h will provide the current longitude and latitude, and optionally a channel that gives information about when the values in the longitude and latitude channels contain valid information. It is recommended that you obtain all of these	e channels from a single NMEA 0183 Sentence.	
Latitude	NMEA RX Latitude		
Longitude	NMEA RX Longitude		
Position valid when	(Car	Car v is Moving	~
•			-
Beacon Location			
Either manually enter the	e latitude and longitude for the end points of the line that will generate a beacon when crossed, or select a file that contains such information and select an appropriate beacon line.		
Track Name	(iii) Latitude Longitude		
Bearon	Charter 152 12020000000000000000000000000000000		
	Eula Engreessennonne 1 aressesennonne 3		
	 Occumentary of organization accurate 		

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**.

▼ Places				
📃 📚 My Places		_		
🗄 🗌 🛅 Temporary Places	<u>A</u> dd	•	Folder	
	Сору		Placemark	
	Revert		Path	
	Save Place As		Polygon	
	Email		Model	
	Snapshot View		Tour	
			Photo	
			Image Overlay	
			Network Link	

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).

Beacons	
Beacon Type	
GPS beacon receiver	
To be used with the below	r part numbers:
01F-050660	GP5 SHz
015-630090	CSG10 (CAN Serial GPS)
Input Data	
Select the channels which	will provide the current longitude and latitude, and optionally a channet that gives information about when the values in the longitude and latitude channels contain valid information. It is recommended that you obtain all of these channels from a single NMEA 0183 Sentence.
Latitude	INHEARX Lashude
Longitude	NMEA RX Longitude
Position valid when	Car 6 Moving

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.

Beacon Location								
Either manually enter the latitude and longitude for the end points of the line that will generate a beacon when crossed, or select a file that contains such information and select an appropriate beacon line. $1 = 3$								
Track Name	Silverstone New.kml			Latitude	Longitude			
Beacon	Silverstone New	~	Start	52° 4' 9.673" N	1° 1' 20.839" W			
2			Finish	52° 4' 9.087" N	1° 1' 19.631" W			
				○ Decimal degrees ● D	egrees minutes and seconds			

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.

Beacon Type	
Virtual beacon receiver	v
End-Of-Lap Beacon	
An end-of-lap beacon will be gene	rated when the condition has been met.
Condition CAN_Beacon	··· = ·· 1.000

Split beacons

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

Split Beaco	ons							
Up to 64 spli	Up to 64 split beacon conditions may be specified. A split beacon will be generated with the specified beacon code when the condition has been met.							
+ Add Sp	lit Beacon						1	
Condition	Can_Beacon	\odot	=	¥ 4.000	Code	1		
Condition	Can_Beacon		=	× 6.000	Code	2		