

## **INTECRIO: CAN messages**



- I want to send CAN messages
- How do I implement this in INTECRIO?
- The CAN messages will be used to activate sensors
- These sensors will receive the measurement signals via CAN
- How to send CAN message in order to activate a sensor
- The sensors receive the measurement signals via CAN
- Is it possible to configure CAN message in INTECRIO to communicate with sensors?



- $\circ$  In INTECRIO it is possible to create a CAN device for an ES910 under Hardware Systems
- This CAN device allows to create any CAN messages (frames and signals)
- Finally, configure the OS accordingly
- In **INTECRIO** → **Workspace** → **Hardware** → **Hardware Systems**: Right mouse button click → **Add Hardware System** ...

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🔁 🕼 Hardware 🚺 🚺	
Hardware Systems	
🕀 🐻 ES1000_ES113	Add Hardware System
🕀 🔞 ES1000_ES113	Import
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🕂 🍓 RTPRO_PC : RTPF	RO-ECU
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In dialog Insert Hardware System  $\rightarrow$  ES900 System  $\rightarrow$  Click Insert button 0

Insert Hardware System	×)
Available Hardware System Types	
ES1000 System	
ES900 System RTPRO-PC System VP-PC System	
2 Insert Cancel	

In dialog **Rename**  $\rightarrow$  Field **Name**: Type a name  $\rightarrow$  Click **OK** button 0

Rename	
Name	
ES910	
2 OK Cancel	

On newly created hardware system "**ES910 : ES900**"  $\rightarrow$  Right mouse button click  $\rightarrow$  **Insert** 0 Target

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In dialog **Rename**  $\rightarrow$  Field **Name**: Type a name  $\rightarrow$  Click **OK** button 0

Rename	×
Name	
ES910	
2 OK Cancel	

On newly created target "ES910 : ES910 (E-Target)"  $\rightarrow$  Right mouse button click 0  $\rightarrow$  Insert ...

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<ul> <li>Image: Big State</li> <li>Image: Big State</li></ul>	1130 : E 1135 : E 900 900 : ES910 CU	5100 5100 1 (E-Targ	butt	on click	

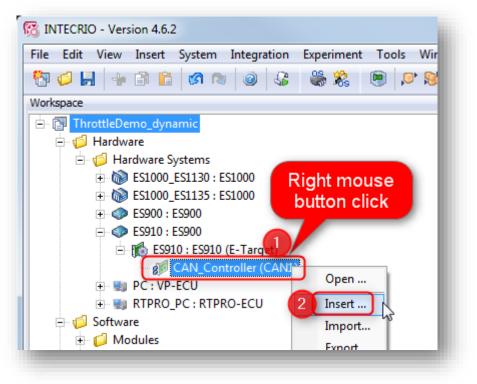
In dialog Insert New Item  $\rightarrow$  Select CAN Controller  $\rightarrow$  Click Insert button 0

Insert New Item	
Available Items	
CAN Controller Daisychain ES920 (FlexRay) Ethernet ETK Bypass LIN System Device (ES910)	
2 Insert Cancel	

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• On newly created **CAN\_controller (CAN1)**  $\rightarrow$  Right mouse button click  $\rightarrow$  **Insert** ...



 $\circ$  In dialog Insert New Item  $\rightarrow$  Select CAN IO  $\rightarrow$  Click Insert button

Insert New Item	<b></b>
Available Items	
CAN IO XCP Bypass	
Insert Cancel	

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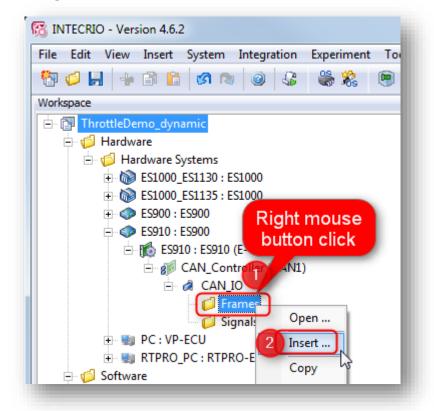


 $\circ \quad \text{In dialog } \textbf{Rename} \rightarrow \text{Field } \textbf{Name} \text{: Type a name} \rightarrow \text{Click } \textbf{OK} \text{ button}$ 

• Expand newly created **CAN\_IO** 

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	ES1000_ES1130 : ES1000
🕂 🔞	ES1000_ES1135 : ES1000
i	ES900 : ES900
Ė	📸 ES910 : ES910 (E-Target)
	🖻 💋 CAN_Controller (CAN1)
	🖻 👌 CAN_IO
~	👘 📁 Frames
	🔤 📁 Signals
÷ 🔇	ES910 : ES900
主 関	PC:VP-ECU

 $\circ$  On **Frames**  $\rightarrow$  Right mouse button click  $\rightarrow$  **Insert** ...



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 $\circ \quad \text{In dialog } \textbf{Rename} \to \text{Field } \textbf{Name} \text{: Type a name} \to \text{Click } \textbf{OK} \text{ button}$ 

Name	
1 CAN_Frame	
2 OK Cancel	

 $\circ$   $\,$  On newly created frame  $\rightarrow$  Right mouse button click  $\rightarrow$  Open ...

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ES910 : ES900 Right mouse
ES910 : ES910 (E-Target) button click
E CAN_Controller (CAN1)
E Frames
CAN_Frame 0x0 2 Dpen
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• Dialog **CAN\_Frame** is displayed:

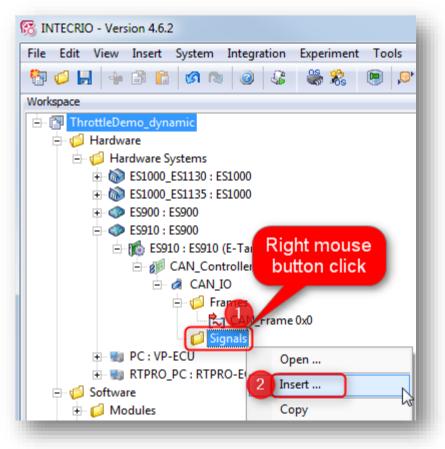
	Parameter	Value	Comment
	Name	CAN_Frame	
	Direction	receive	
	Polling	<b>V</b>	
	CAN Identifier Type	standard (11 bit)	
	CAN Identifier [hex]	0x0	
	Data Length	8	
	Subsampling Rate		
	Time Monitoring		
a	rameters Frame Layout	Multiplex Groups C	AN Signals   Signals Layout

• Edit the values if required

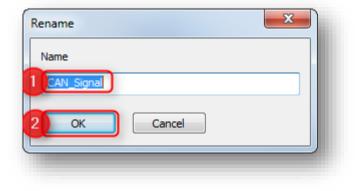
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 $\circ \quad \text{On Signals} \to \text{Right mouse button click} \to \text{Insert} \dots$ 



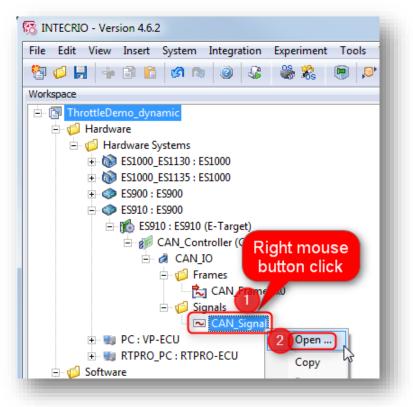
o In dialog **Rename**  $\rightarrow$  Field **Name**: Type a name  $\rightarrow$  Click **OK** button



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 $\circ$  On newly created signal **CAN\_Signal**  $\rightarrow$  Right mouse button click  $\rightarrow$  **Open ...** 



• Dialog CAN\_Signal is displayed

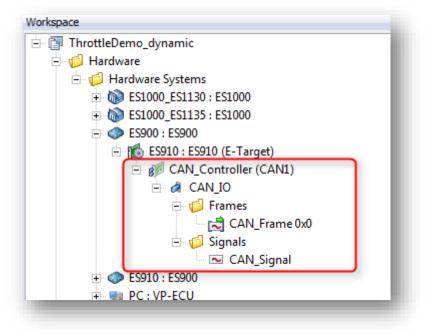
	Parameter	Value	Comment
	Name	CAN_Signal	
	SignalType	udisc	
}	Unit		
4	Formula	f(phys) := phys	
5	Automatic Min/Max Calculation	<b>V</b>	
6	Min	0	
7	Max	255	
B	Init Value	0	
9	Data Type	uint8	
10	Signal Size [Byte]	1	
11	Signal Length [Bit]	8	
12	Signal Byte Ordering	big endian (Motorola)	

o Edit the values if required

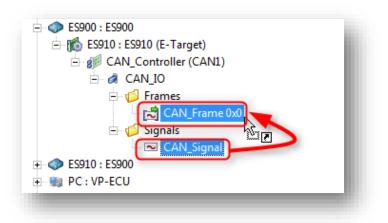
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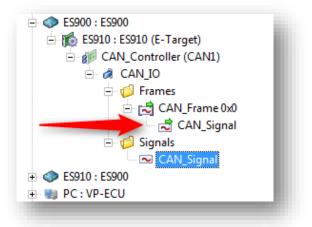
• Now, we have created a CAN frame and a CAN signal:



- $\circ$  It is possible to associate CAN signals to CAN frames via drag and drop
- $\circ~$  On CAN  $signal \to$  Click and hold left mouse button  $\to$  Move mouse pointer to Can  $frame \to$  Release left mouse button



 $_{\odot}$   $\,$  The CAN signal will be displayed under the associated CAN frame



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On **CAN\_IO**  $\rightarrow$  Right mouse button click  $\rightarrow$  **Open ...** 0

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🖃 🎼 ES910 : ES910 (E-Target)		
CAN_Controller (CAN1)		
Right mouse	<u> </u>	
In the second se		
DUTTON CIICK		5

Dialog **CAN\_IO** is displayed: 0

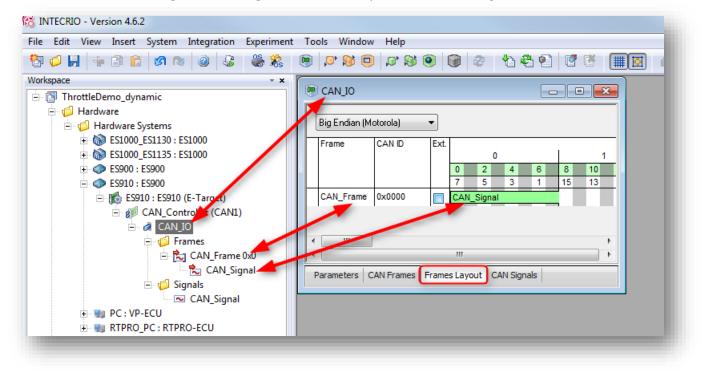
 Parameter	Value	Comment
 Name	CAN_IO	
CANdb File		
Default Byte Order	big endian (Motorola)	
Default CAN Identifier Type	standard (11 bit)	

Edit the values if required 0

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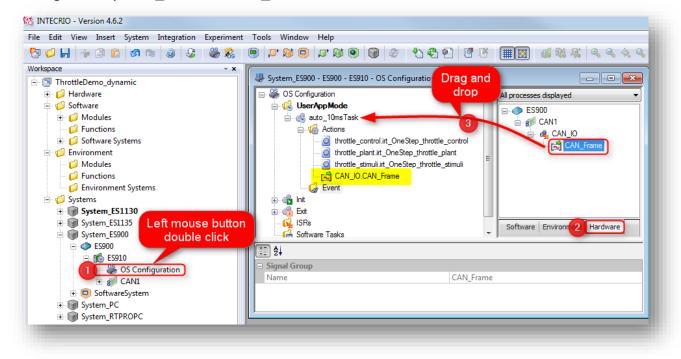


• Click on tabs to investigate the configuration, for example tab **Frames Layout**:



Finally, configure the OS

- o Navigate to Systems → System\_ES900 → ES910 → OS Configuration o Left mouse button double click
- In dialog System\_ES900 ES900 ES910 OS Configuration → Tab Hardware → Drag and drop CAN\_Frame to auto\_10msTask



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