

EMBEDDED
SYSTEMS
ACADEMY

CANopen Network Simulation

Introduction to the Traffic Light Demo of CANopen Magic ProDS Eval

Presented by Olaf Pfeiffer

EMBEDDED SYSTEMS ACADEMY

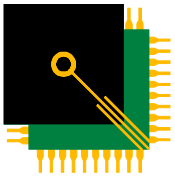
**Related
Classes**

[Exercise 1](#)
[Exercise 2](#)

PCOMPDS Intro
July 2005

Slide 1

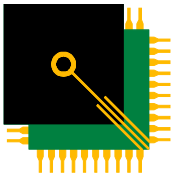
www.CANopenMagic.com



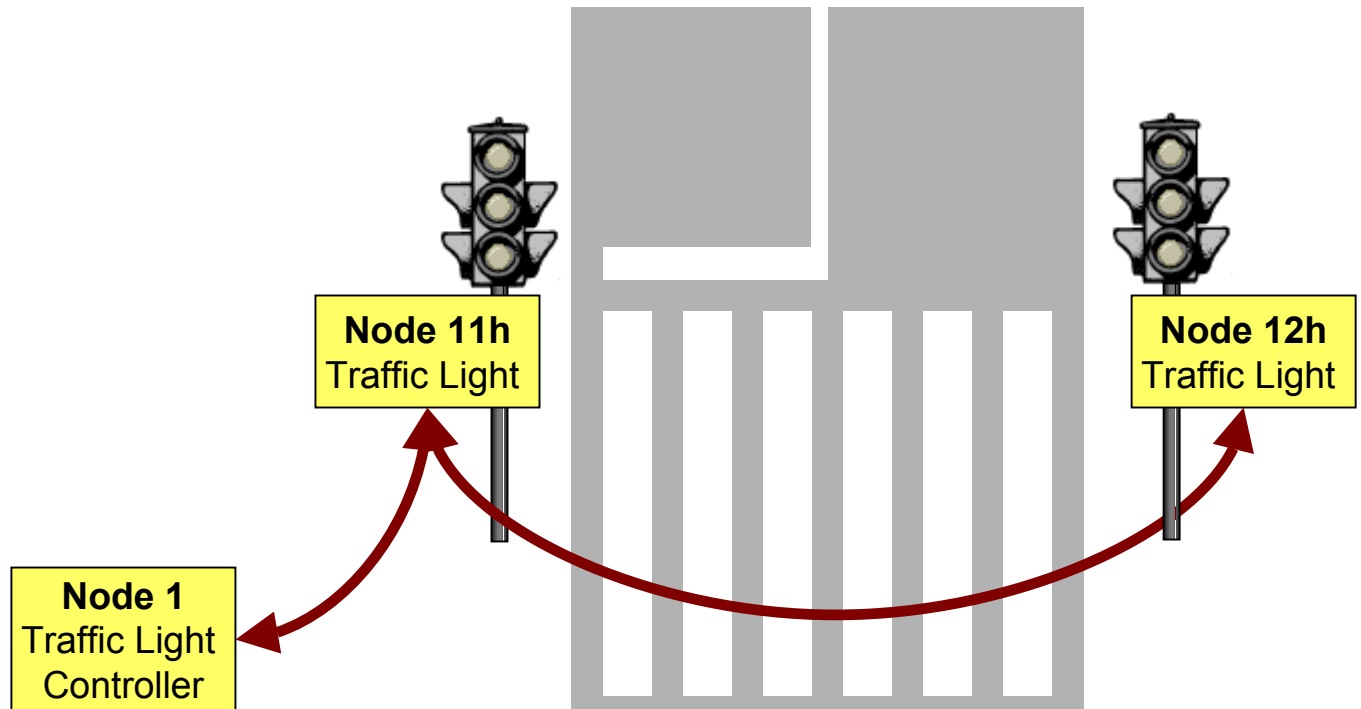
Start the traffic light demo

- Click on the Windows Start button
- Locate “CANopen Magic ProDS Eval”
 - Default location is in “Programs”
- Select subfolder “Demonstration Projects”
- Choose
“Ped Traffic Light Demo”

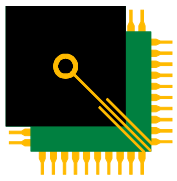




Pedestrian Traffic Light Overview



- ❑ **3 Nodes are simulated:**
 - Two traffic lights
 - One traffic light controller



Screenshots

EMBEDDED
SYSTEMS
ACADEMY

CANopen Magic ProDS Eval - Ped Traffic Light Demo

File View Options Tools Help

Baud Rate: 125kbps

Node: [0x01 (1d)] Traffic Light Controller [Scan Network]

Node Status: Operational Last Emergency: Error Reset or No Error

[Read (Upload)] [Write (Download)] [Network Management] [Simulation]

Entry: [0x1000,0x00] Device Type [S]

Entry Type: UNSIGNED32

Display Data in: Hexadecimal Value

Data: 0x []

Length: [] bytes

Store Data in File [Browse] [Read]

Now you can get all your CANopen tools online!
www.CANopenStore.com

[0x11 (17d)] Traffic Light ...

File Edit Data Options

RUN ERR Node Status: Operation.

Object Dictionary Inputs and Outputs

MicroCANopen Traffic Light

0.0 9.0

[0x12 (18d)] Traffic Light ...

File Edit Data Options

RUN ERR Node Status: Operation.

Object Dictionary Inputs and Outputs

MicroCANopen Traffic Light

0.0 9.0

Click the buttons to simulate inputs

[0x01 (1d)] Traffic Light Controller - COP_TrafficControl_X.sim

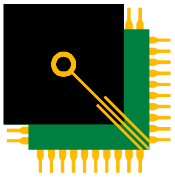
File Edit Data Options

RUN ERR Node Status: Operational

Object Dictionary Inputs and Outputs Process Image

Traffic Light Controller

Requests	Car	Ped	Lights	Car	Ped
	0x00	0x00		0x01	0x02
	0x00	0x00	Time	0x0000	0x0009

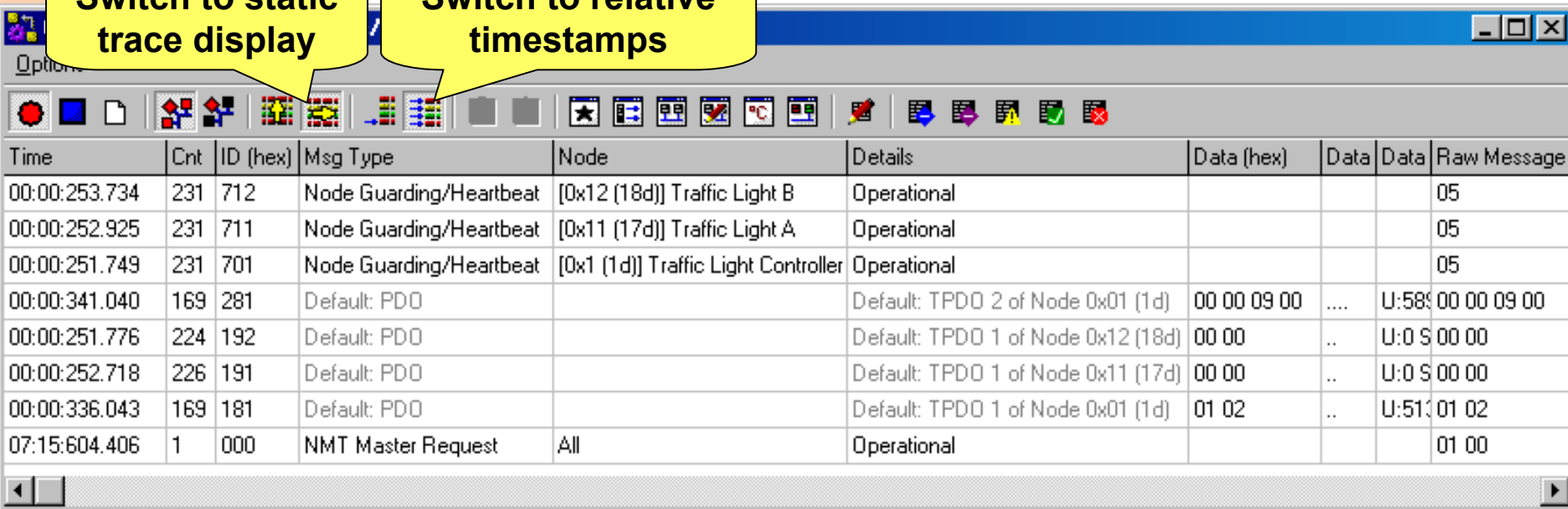


Trace

- Open the trace window to see all simulated CANopen network traffic

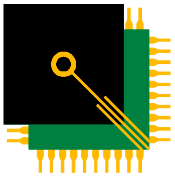
Switch to static trace display

Switch to relative timestamps



Time	Cnt	ID (hex)	Msg Type	Node	Details	Data (hex)	Data	Data	Raw Message
00:00:253.734	231	712	Node Guarding/Heartbeat	[0x12 (18d)] Traffic Light B	Operational				05
00:00:252.925	231	711	Node Guarding/Heartbeat	[0x11 (17d)] Traffic Light A	Operational				05
00:00:251.749	231	701	Node Guarding/Heartbeat	[0x1 (1d)] Traffic Light Controller	Operational				05
00:00:341.040	169	281	Default: PDO		Default: TPDO 2 of Node 0x01 (1d)	00 00 09 00	U:58	00 00 09 00
00:00:251.776	224	192	Default: PDO		Default: TPDO 1 of Node 0x12 (18d)	00 00	..	U:0 S	00 00
00:00:252.718	226	191	Default: PDO		Default: TPDO 1 of Node 0x11 (17d)	00 00	..	U:0 S	00 00
00:00:336.043	169	181	Default: PDO		Default: TPDO 1 of Node 0x01 (1d)	01 02	..	U:51	01 02
07:15:604.406	1	000	NMT Master Request	All	Operational				01 00

- 701h, 711h, 712h: 250ms heartbeats
- 181h, 191h, 192h: Transmit PDO 1 of each node
- 000h: Network Management Master (NMT) Message



Related Web Pages

- CANopen Magic**
 - www.CANopenMagic.com
- Book recommendation**
 - www.CANopenBook.com
- Embedded Systems Academy**
 - www.ESAcademy.com

**Related
Classes**

[Exercise 1](#)
[Exercise 2](#)

