Autonetwork example

All references in this document refer to document *DPA Framework Technical Guide v.3.00*

Used firmware on TR modules:

1 x *GeneralHWP-Coordinator-STD-SPI-7xD-V300-170314.iqrf* with the
   CustomDpaHandler-Coordinator-AutoNetwork-7xD-V300-170314.hex

6 x *GeneralHWP-Node-STD-SPI-7xD-V300-170314.iqrf* with the
   CustomDpaHandler-AutoNetwork-7xD-V300-170314.hex

(Do not forget to enable custom handler in TR configuration for HWP)

Before compilation of Autonetwork example source code, the `__STORE_CODE_SUPPORT__`
configuration switch of DPA support library in *dpa_library.h* file should by disabled.

List of commands:

- `rst`   - print header of Console command processor

- `ledr on „NADR"`   - see chapter *3.9.2 Set*
- `ledr off „NADR"`   - see chapter *3.9.2 Set*
- `ledr pulse „NADR"` - see chapter *3.9.4 Pulse*

- `clrbonds` - clears all bonded nodes in coordinator, unbond all bonded nodes and execute their restart. (see chapter *3.2.5 Clear all bonds,* chapter *3.3.3 Remove bond,* chapter *3.4.3 Reset*).

```
cmd> clrbonds

Remove all bonds at nodes and coordinator, restart nodes
```

- `autontw 60 1 1 25 1`   - command to start Autonetwork algorithm where:

   60 = temporary address timeout
   1 = authorize retries
   1 = discovery retries
   25 = prebonding interval
   1 = TX power

   It is possible to use `autontw` command without parameters. In this case Autonetwork algorithm use its default parameters.

   60 = temporary address timeout
   1 = authorize retries
   1 = discovery retries
   35 = prebonding interval
   1 = TX power

Algorithm round 1.

```
cmd> autontw 60 1 1 25 1

Automatic network construction started
Getting initial network info

Round=1, Nodes=0, New nodes=0
Enable prebonding at coordinator, mask=0, time=60
Waiting for prebonding for 25 seconds
Disable prebonding at coordinator
Coordinator prebonded MID=8100881E, UserData=02046E39
Coordinator prebonded MID=81102D5A, UserData=02046E39
Coordinator prebonded MID=81008831, UserData=02046E39
Coordinator prebonded MID=81102D56, UserData=02046E39
Coordinator prebonded MID=81102D60, UserData=02046E39
Coordinator prebonded MID=81004A57, UserData=02046E39
Authorizing node MID=8100881E, address 1
OK, nodes count=1
Authorizing node MID=81102D5A, address 2
OK, nodes count=2
Authorizing node MID=81008831, address 3
OK, nodes count=3
Authorizing node MID=81102D56, address 4
OK, nodes count=4
Authorizing node MID=81102D60, address 5
OK, nodes count=5
Authorizing node MID=81004A57, address 6
OK, nodes count=6
Running FRC to check new nodes and removing 0xFE nodes
Remote unbonding node 2
Removing node 2
Running discovery
Discovered nodes=5
Waiting for coordinator to finish discovery
```

Algorithm round 2.

```
Round=2, Nodes=5, New nodes=5
Enable prebonding at nodes, mask=7, time=60, LEDR=1
Enable prebonding at coordinator, mask=7, time=60
Waiting for prebonding for 25 seconds
Disable prebonding at coordinator
Running FRC to disable and check for prebonding
Node 3 prebonded MID=81102D5A, UserData=3D046E74
Authorizing node MID=81102D5A, address 7
OK, nodes count=6
Running FRC to check new nodes and removing 0xFE nodes
Running discovery
Discovered nodes=6
Waiting for coordinator to finish discovery
```

Algorithm round 3.

```
Round=3, Nodes=6, New nodes=6
Enable prebonding at nodes, mask=7, time=60, LEDR=1
Enable prebonding at coordinator, mask=7, time=60
Waiting for prebonding for 25 seconds
Disable prebonding at coordinator
Running FRC to disable and check for prebonding
No new node prebonded
```

Autonetwork algorithm is possible to end anytime, when you type **Q** or **q** and hit *ENTER*.

```
Round=4, Nodes=6, New nodes=6
Enable prebonding at nodes, mask=7, time=60, LEDR=1
Enable prebonding at coordinator, mask=7, time=60
Waiting for prebonding for 25 seconds
Disable prebonding at nodes
Disable prebonding at coordinator
Automatic network construction stopped

cmd>
```