

Autonetwork V2 example

All references in this document refer to document *Tech_Guide_DPA-Framework-400_190120*

Autonetwork V2 is based on special usage of Smart Connect command, which is supported only in IQRF OS V4.03 and more and DPA Framework V3.03 and more.

Unlike of Autonetwork V1, no special Custom DPA Handler is needed at coordinator and nodes, thus all Custom DPA Handler Flash memory is available to the user.

Used firmware on TR modules:

1 x *HWP-Coordinator-SPI-7xD-V400-190120.iqrf*

6 x *HWP-Node-STD-7xD-V400-190120.iqrf*

Before compilation of Autonetwork V2 example source code, the `__STORE_CODE_SUPPORT__` configuration switch of DPA support library in *dpa_library.h* file should be disabled.

If the `__DPA_DEVELOPER_MODE__` switch is enabled, the console displays the contents of the data packets between the Arduino board and the TR module.

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 3.9.3 *Pulse*
- `clearbonds` - 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 3.4.4 *Restart*, chapter 3.4.11 *Batch*).

```
cmd> clearbonds
```

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

- `autonetwork 5 2 1 1` - command to start Autonetwork V2 algorithm where:

5 = number of autonetwork waves

2 = number of free autonetwork waves to stop autonetwork process (no new nodes bonded)

1 = discovery retries

1 = TX power

It is possible to use `autonetwork` command without parameters. In this case AutonetWORK V2 algorithm use its default parameters.

10 = number of autonetwork waves

2 = number of free autonetwork waves to stop autonetwork process (no new nodes bonded)

1 = discovery retries

1 = TX power

AutonetWORK wave 1.

```
cmd> autonetwork 5 2 1 1

Automatic network construction started
Getting initial network info

Wave=1, Nodes=0, New nodes=0
Running Smart connect command
Running FRC to check new nodes
Prebonded 6 new node(s)
Running FRC to read new nodes MID
Authorizing node MID=81004A57, address 1
OK, nodes count=1
Authorizing node MID=81102D5A, address 2
OK, nodes count=2
Authorizing node MID=81102D53, 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
Running FRC to check new authorized nodes
Running discovery
Discovered nodes=5
```

AutonetWORK wave 2.

```
Wave=2, Nodes=5, New nodes=5
Running Smart connect command
Running FRC to check new nodes
Prebonded 1 new node(s)
Running FRC to read new nodes MID
Authorizing node MID=8100881E, address 6
OK, nodes count=6
Running FRC to check new authorized nodes
Running discovery
Discovered nodes=6
```

AutonetWORK wave 3.

```
Wave=3, Nodes=6, New nodes=6
Running Smart connect command
Running FRC to check new nodes
No new node prebonded
```

Autonetwork wave 4

```
Wave=4, Nodes=6, New nodes=6  
Running Smart connect command  
Running FRC to check new nodes  
No new node prebonded  
Automatic network construction stopped
```

```
cmd>
```