

# Test Environment **ANDi**

## **CONTACT**

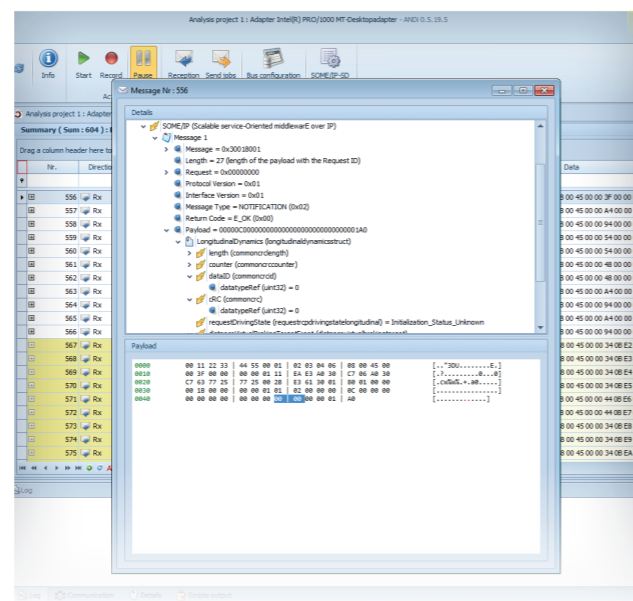
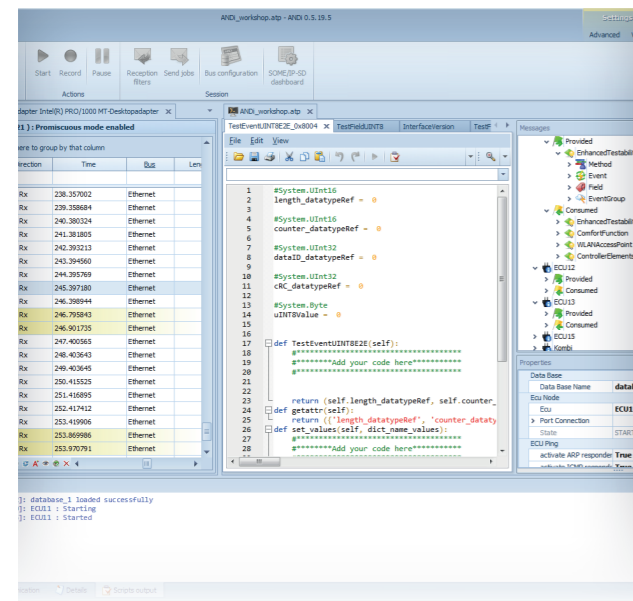
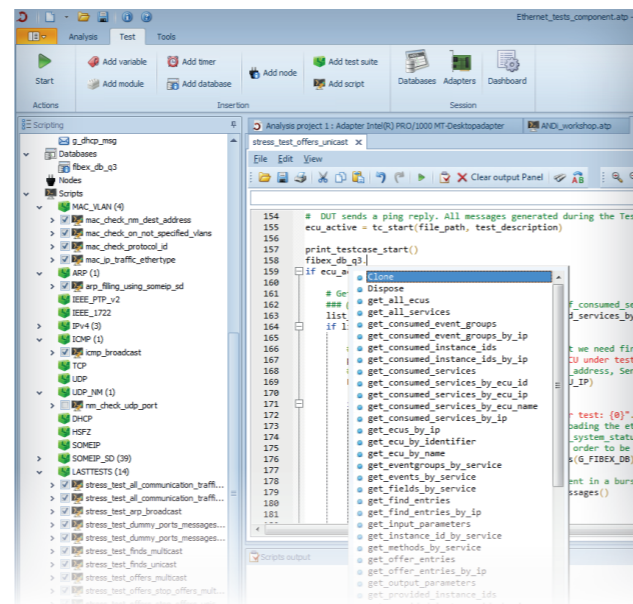
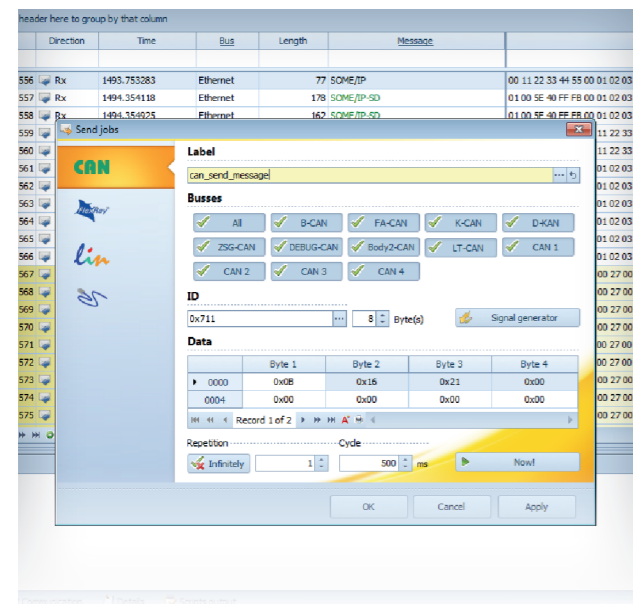
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## **APPLICATION**

**The simple test and simulation environment  
for Ethernet controllers and bus systems**



# The Automotive Network Diagnoser ANDi



## DESCRIPTION

ANDi is a test and simulation environment for Ethernet electronic control units (100BASE-T1) and for CAN, LIN and FlexRay bus systems.

The ANDi environment supports electronic control unit developers with the validation of their ECU functions by means of generated residual bus simulations and intelligent message generators. ANDi helps test teams to validate their ECU functions throughout the test process (planning, development, realisation and reporting).

ANDi can be used to validate tests quickly and easily. ANDi is particularly flexible and user-friendly thanks to its scope of functions, its expandability and its graphical user interface.

## FEATURES

### MESSAGE RECORDING (LOGGING) AND SIGNAL ANALYSIS

- ✓ Supports all common hardware bus interfaces for 100BASE-T1 and 1000BASE-T1 Ethernet CAN, LIN and FlexRay
- ✓ High-performance online and offline data display
- ✓ Logging and handling large Ethernet log files
- ✓ FIBEX and database interpretation and display of bus messages
- ✓ Extensive filtering and visualisation options
- ✓ User-friendly, menu-based definition of message generators
- ✓ Access to bus communication through the OBD socket (BMW only)
- ✓ Signal observers offer graphical presentation of signals

### CREATING TEST CASES

- ✓ Easy-to-learn test case creation in Python
- ✓ Large number of convenient functions and extensions
- ✓ User-friendly, FIBEX-based modules for creating generic test sequences
- ✓ High data rates supported for load tests
- ✓ Test scripts can be reused if FIBEX databases change
- ✓ Extensive and efficient API interfaces
- ✓ Import any .NET extensions

### RESIDUAL BUS SIMULATIONS (RBS)

- ✓ FIBEX-based generation of simulation nodes
- ✓ User-friendly Drag & Drop functions for creating simulation nodes
- ✓ Complete simulation of the SOME/IP and SOME/IP-SD protocols
- ✓ ECU multihoming simulations (several MACs and IPs including VLAN, ARP and ICMP on one simulation node) supported
- ✓ Broad spectrum of convenient functions

- ✓ such as cyclic triggering of events
- ✓ Generated simulation nodes can be extended with Python scripts (customising)

### STANDARD AUTOMOTIVE ETHERNET TESTS

In cooperation with BMW AG and several automotive suppliers, on the basis of the ANDi environment Technica Engineering GmbH has created a powerful validation package for Ethernet communication protocols. It currently covers the following areas:

- ✓ Stress and application tests
- ✓ Format checks
- ✓ Data input
- ✓ Negative tests
- ✓ Start-up and shutdown

### BUS SYSTEMS AND PROTOCOLS SUPPORTED

- ✓ Standard Ethernet protocols (including Ethernet, IP, DHCP, TCP, UDP, ARP, TFTP)
- ✓ Automotive Ethernet protocols (including SOME/IP, SOME/IP-SD, HSFZ, UDP-NM, PTP, IEEE1722)
- ✓ Bus systems: 100BASE-T1 Ethernet, CAN, LIN and FlexRay
- ✓ Message databases: FIBEX 4.1.0., LDF, DBC, ARXML
- ✓ Log file formats: PCAP, ASC, AML

Customised extensions are also supported in close cooperation with OEMs and their suppliers.

### OTHER FEATURES:

- ✓ MAC\_VLAN
- ✓ IEEE\_PTP\_v2
- ✓ IEEE\_1722
- ✓ IPv4, ICMP
- ✓ TCP, UDP, UDP\_NM
- ✓ DHCP, HSFZ
- ✓ SOMEIP,
- ✓ SOMEIP\_SD
- ✓ IPv6
- ✓ DoIP
- ✓ ARXML