



The TTCN-3 Test Environment

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What Is TTCN-3?

- Test and Testing Control Notation
- Internationally standardized testing language for formally defining test scenarios. Designed purely for testing
- Taking the best bits of TTCN-2 and combining them with a new more powerful textual notation

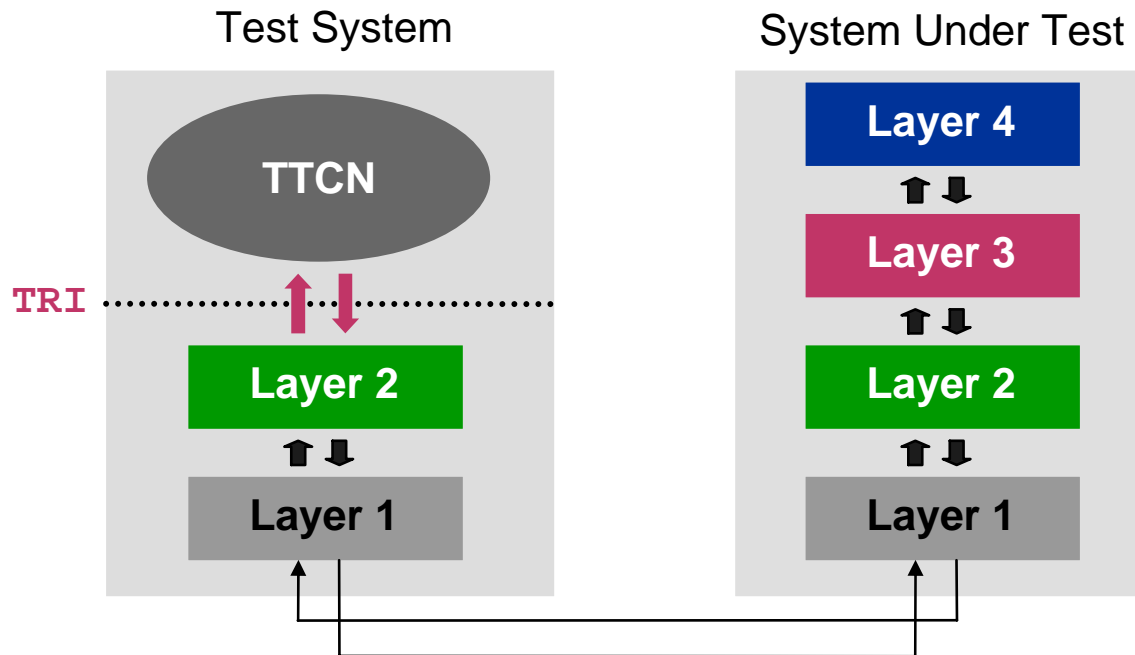
```

testcase Hello_Theo () {
    p.send("How are you doing?");
    alt {
        [ ]p.receive("Fine!")
            {setverdict( pass )};
        [else]
            {setverdict( inconc )} //Theo asleep!
    }
}

```

TTCN-3 Interfaces

- Tool vendor independent
- TTCN-3 Runtime Interface
- TTCN-3 Control Interface
- TTCN-3 Logging Interface



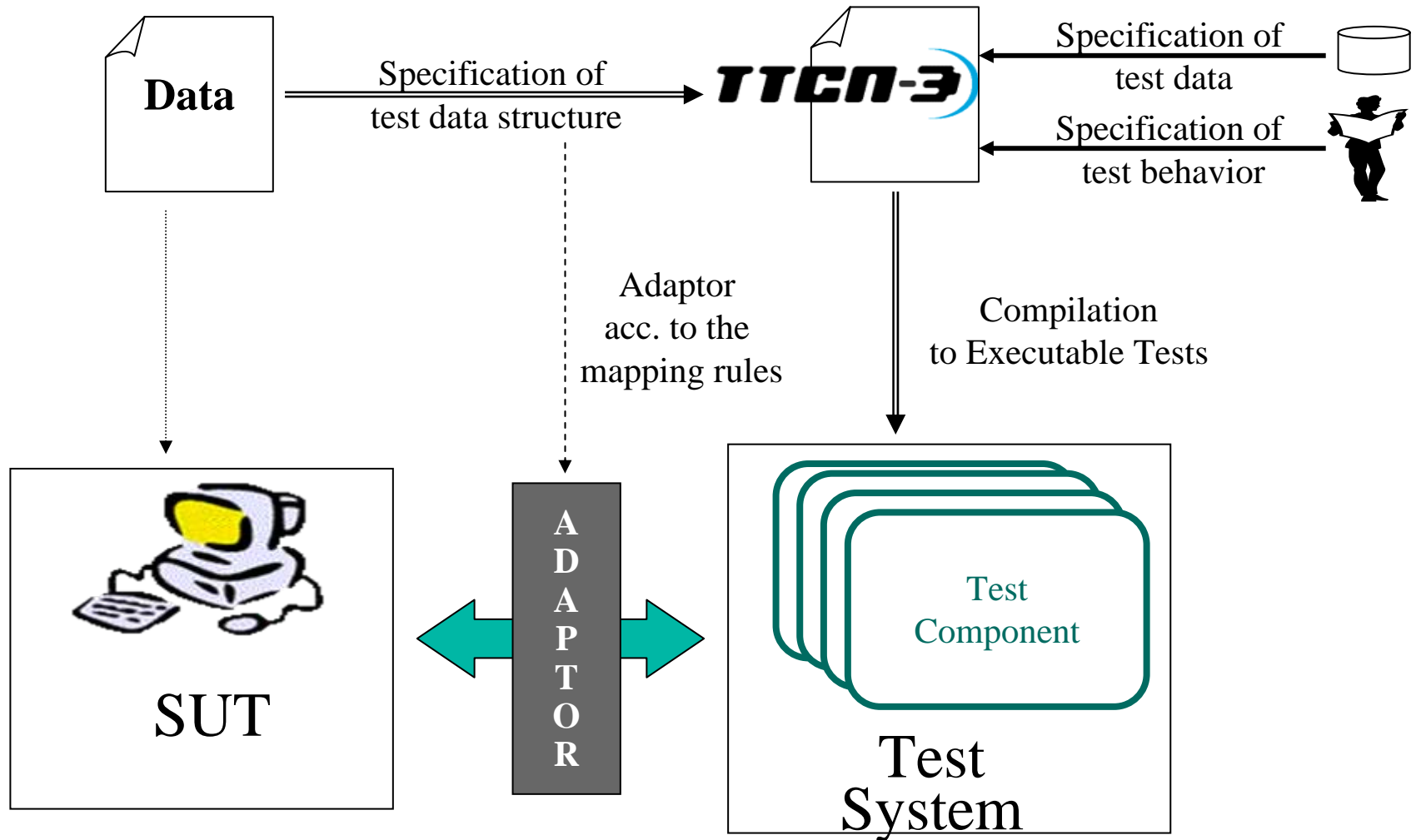
Application Areas

- New application areas
 - Software Testing
 - Text-based protocols ...
- Additional communication paradigm
 - Message-based communication
 - Procedure-based communication
- Different kinds of testing
 - Functional testing
 - Conformance testing
 - Scalability testing ...
- Covering larger range within development cycle
 - From unit to integration testing

Main Aspects of TTCN-3

- Triple C
 - **Configuration:** Dynamic concurrent test configurations with test components
 - **Communication:** Various communication mechanisms (synchronous and asynchronous)
 - **Control:** Test case execution and selection mechanisms
- Features
 - Harmonized with ASN.1
 - Module concept
 - Extendibility via attributes, external function, external data
 - Well-defined syntax, static and operational semantics
 - Different presentation formats

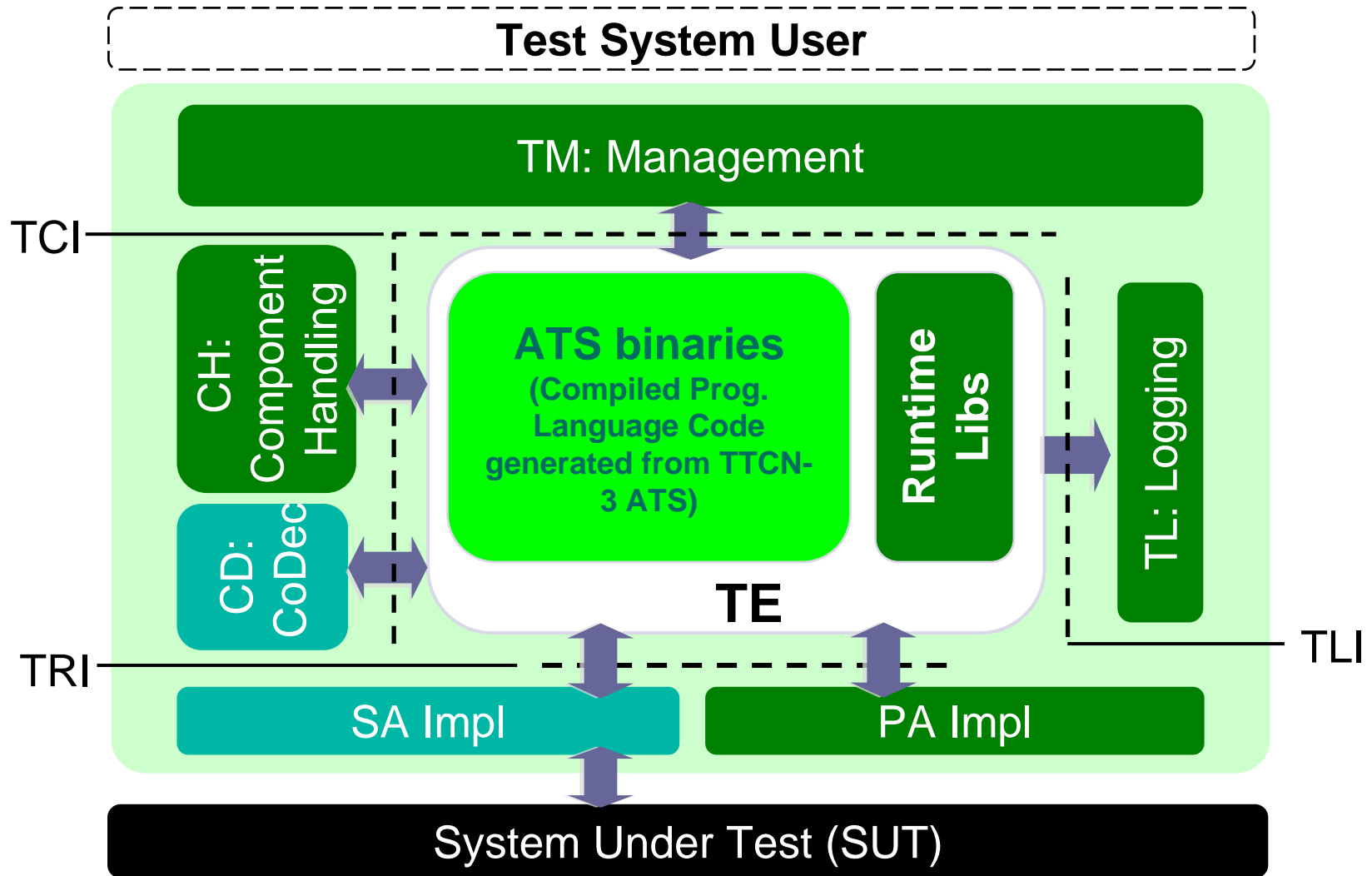
Overall Picture



The TTCN-3 Execution Interfaces

- **Standardized adaptation** for management, component handling and communication, external data representation with encoding/decoding and logging **for local and distributed test setups**
- **Well-defined interfaces** as a set of operations independent of the target, i.e. SUT, processing platform, implementation language, etc.
- Code from **any compiler** supporting/using this interface can be executed on **any test platform/test device**, which supports/uses those interfaces

TTCN-3 System Architecture



Tools

- Tool Provider
 - Testing Technologies
 - Telelogic
 - Danet
 - DaVinci Communication
 - STS
 - IBM/Rational
 - OES
 - ... ?
- Internal
 - Nokia
 - Ericsson
 - Motorola
- Test Devices
 - Tektronix G20
 - NetTest InterWatch
 - Acacia Clarinet
 - Nethawk
 - Alcatel A1100
 - ... ?

Further Information

- ETSI
 - <http://www.etsi.org/ptcc/ptccttn3.html>
 - ttn3@list.etsi.org
- Testing Technologies
 - <http://www.testingtech.de/technology>
- Ina Schieferdecker
 - schieferdecker@fokus.fraunhofer.de