Motivation

Overview of MIDAS

MIDAS Test Generation

Conclusion
Consortium

Dedalus

Adpersonam

Fraunhofer FOKUS

Instituto Tecnológico de Aragón

Simple Engineering

Consiglio Nazionale delle Ricerche

Sintesio

Georg-August-Universität Göttingen

Laboratoire d’Informatique de Paris 6
Motivation

- Software and software architectures evolved
- More and more industrial software is based on SOA
- Often available on the cloud
  - Software as a Service (SaaS)
- Testing did not evolve!
Overview of MIDAS

MIDAS User Front End

MIDAS Test Evaluation Planning Scheduling

SAUT Model

MIDAS Test Generation

Test Data

Test cases & scenarios

Journal

Services Architecture Model

Services Architecture Under Test

Bidirectional message transmission Bidirectional rpc

MIDAS PaaS

Test Management and Control

TTCN-3 Executable

TC

SAUT Adapters

TTCN-3 Libraries

Test Logging

MIDAS TTCN-3 Libraries

Test cases & scenarios
Overview of MIDAS

- Functional Testing
- Security Testing
- Usage-based Testing
MIDAS DSL for Modeling Tests

SUT Structure as UML Object Diagram

Test Cases as UML Sequence Diagrams
Security Testing with Data and Behavioral Fuzzing

- **Security testing**
  - Fuzzes UML Sequence diagrams
    - *Data fuzzing*
    - *Behavioral fuzzing*
    - *Combination of both (combined fuzzing)*

```
GET /infotext.html HTTP/1.1
Host: www.example.net

GET /infotext.html HTTP/1.1
Host: www.example.net%s%s
```

Traditional Data Fuzzing

```
GET /infotext.html HTTP/1.1
Host: www.example.net
```

Behavioral Fuzzing

```
GET /infotext.html HTTP/1.1
Host: www.example.net
Host: www.example.net
```
Usage-based Testing

Service Orchestration → Usage Journal → Usage Profile

- SUT Test Model
- Test Cases
- Test Sequences
Web-based Dashboard as User Interface

This is a demo version, partial functionalities are available

Upload a file or start a Demo Test Execution
Upload your files and run simple test execution scenarios with the TTworkbench Executor.

Test Status
This allows you to get the status of the test tasks in execution.

Logout
Click to logout.
More testing features

- Functional Testing
- Intelligent test scheduling
- Manual design of tests with UML Sequence diagram
- Generation of TTCN-3 code from UML Sequence diagrams
- Direct execution of TTCN-3 code

- MIDAS DSL as a test modeling language for SOAs
  - Uses the UML Testing Profile

- Only touched the surface of our features
  - Many more!
Thank you for your attention!

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