

# MIDAS

testing on cloud

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**M**odel and  
**I**nference  
**D**riven  
**A**utomated testing of  
**S**ervices architectures

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GÖTTINGEN

- **Motivation**
- **Overview of MIDAS**
- **MIDAS Test Generation**
- **Conclusion**



**Dedalus** ADPERSONAM  
HEALTHCARE SYSTEMS GROUP

 **Fraunhofer**  
FOKUS   
INSTITUTO TECNOLÓGICO DE ARAGON

**SimplEngineering**

  
Consiglio Nazionale  
delle Ricerche



**SINTESI**

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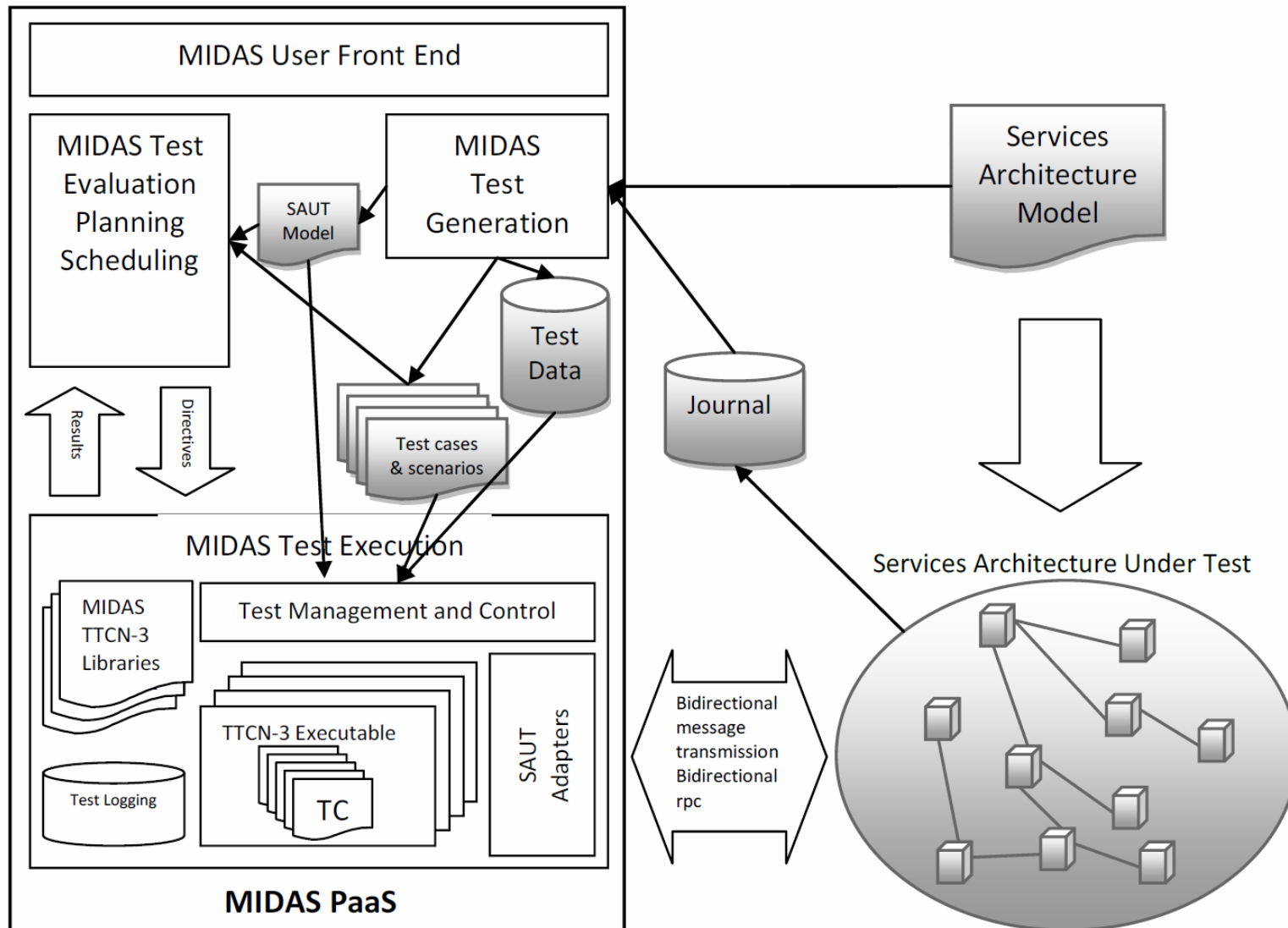
**LIP** Laboratoire d'Informatique de Paris 6



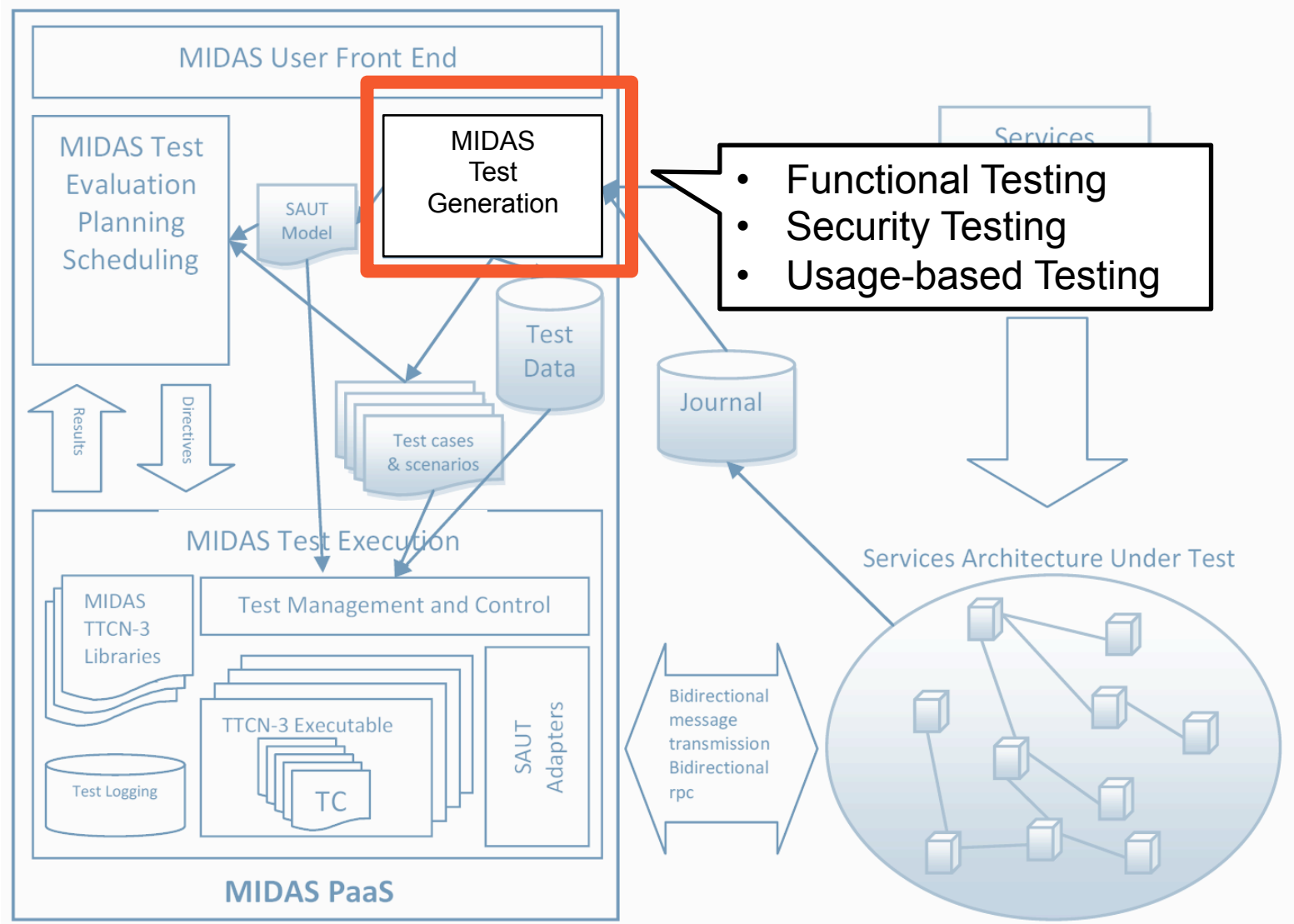
- **Software and software architectures evolved**
- **More and more industrial software is based on SOA**
- **Often available on the cloud**
  - Software as a Service (SaaS)
- **Testing did not evolve!**



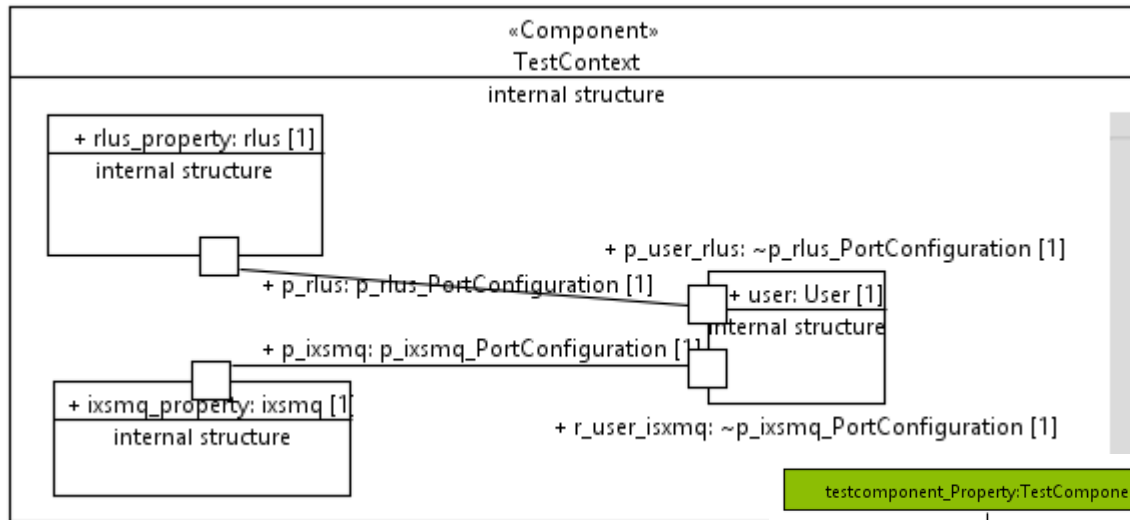
# Overview of MIDAS



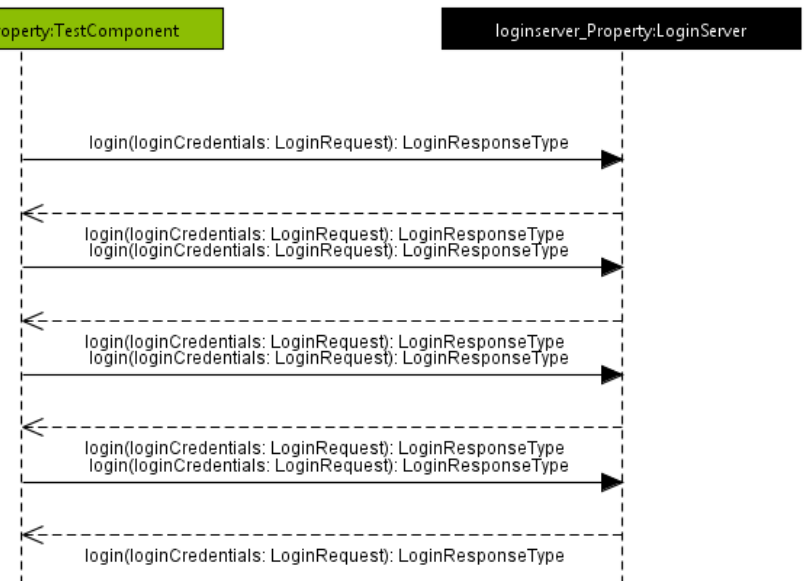
# Overview of MIDAS



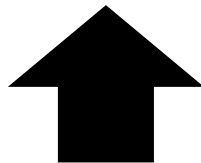
# MIDAS DSL for Modeling Tests



## Test Cases as UML Sequence Diagrams



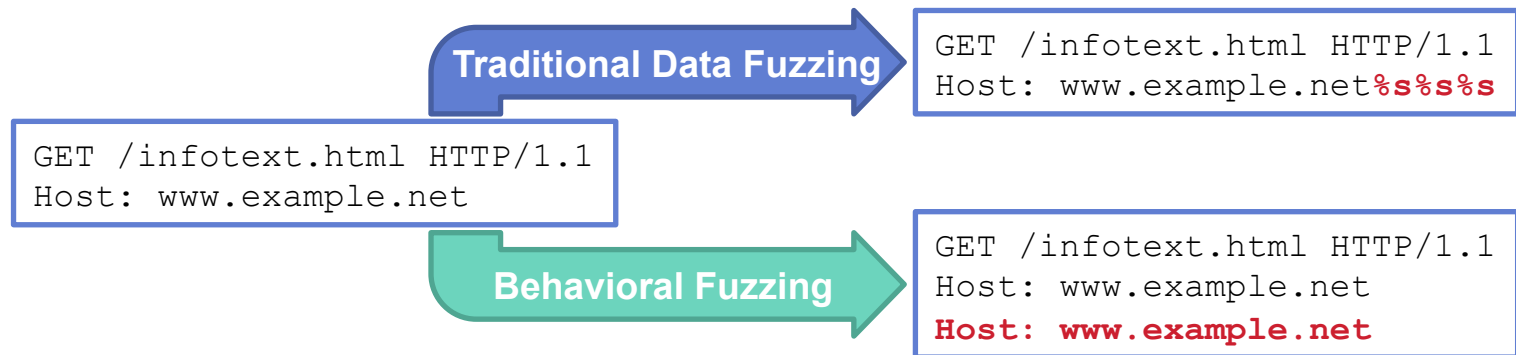
## SUT Structure as UML Object Diagram



# Security Testing with Data and Behavioral Fuzzing

## ■ Security testing

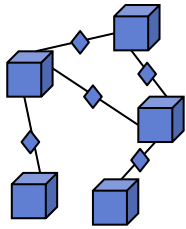
- Fuzzes UML Sequence diagrams
  - *Data fuzzing*
  - *Behavioral fuzzing*
  - *Combination of both (combined fuzzing)*





# Usage-based Testing

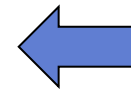
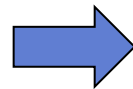
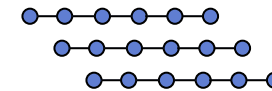
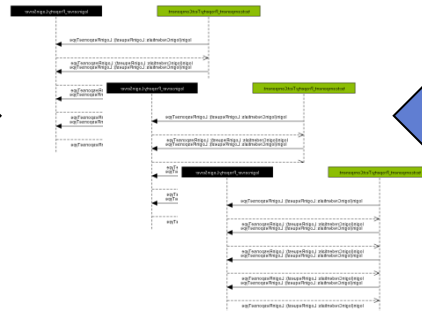
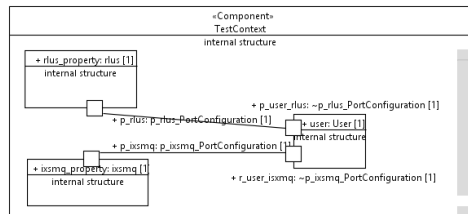
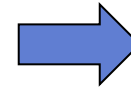
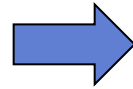
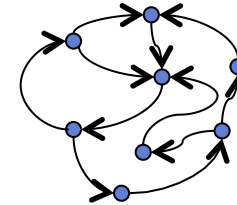
Service Orchestration



Usage Journal



Usage Profile



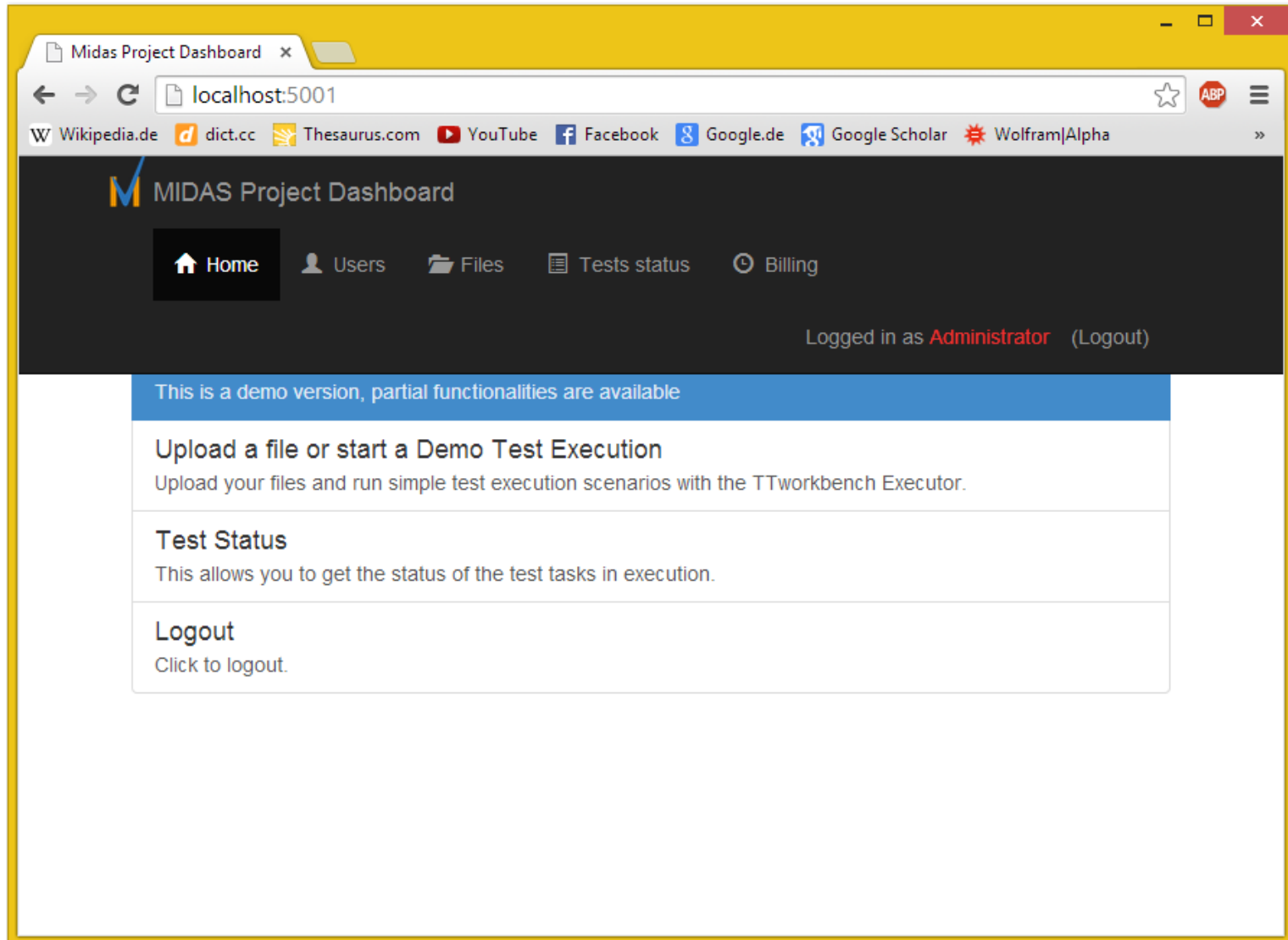
SUT Test Model

Test Cases

Test Sequences



# Web-based Dashboard as User Interface



The screenshot shows a web browser window titled "Midas Project Dashboard" with the address bar displaying "localhost:5001". The browser's address bar includes navigation buttons (back, forward, refresh) and a search icon. Below the address bar, there are several search engines and services listed: Wikipedia.de, dict.cc, Thesaurus.com, YouTube, Facebook, Google.de, Google Scholar, and Wolfram|Alpha. The main content area of the dashboard features a dark header with the MIDAS logo and the text "MIDAS Project Dashboard". Below the header, there is a navigation menu with icons and labels for "Home", "Users", "Files", "Tests status", and "Billing". The "Home" button is highlighted. In the top right corner of the dashboard, it says "Logged in as Administrator (Logout)". Below the navigation menu, there is a blue banner that reads "This is a demo version, partial functionalities are available". The main content area is divided into three sections: "Upload a file or start a Demo Test Execution" with the subtext "Upload your files and run simple test execution scenarios with the TTworkbench Executor.", "Test Status" with the subtext "This allows you to get the status of the test tasks in execution.", and "Logout" with the subtext "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!



# MIDAS

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## Thank you for your attention!

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