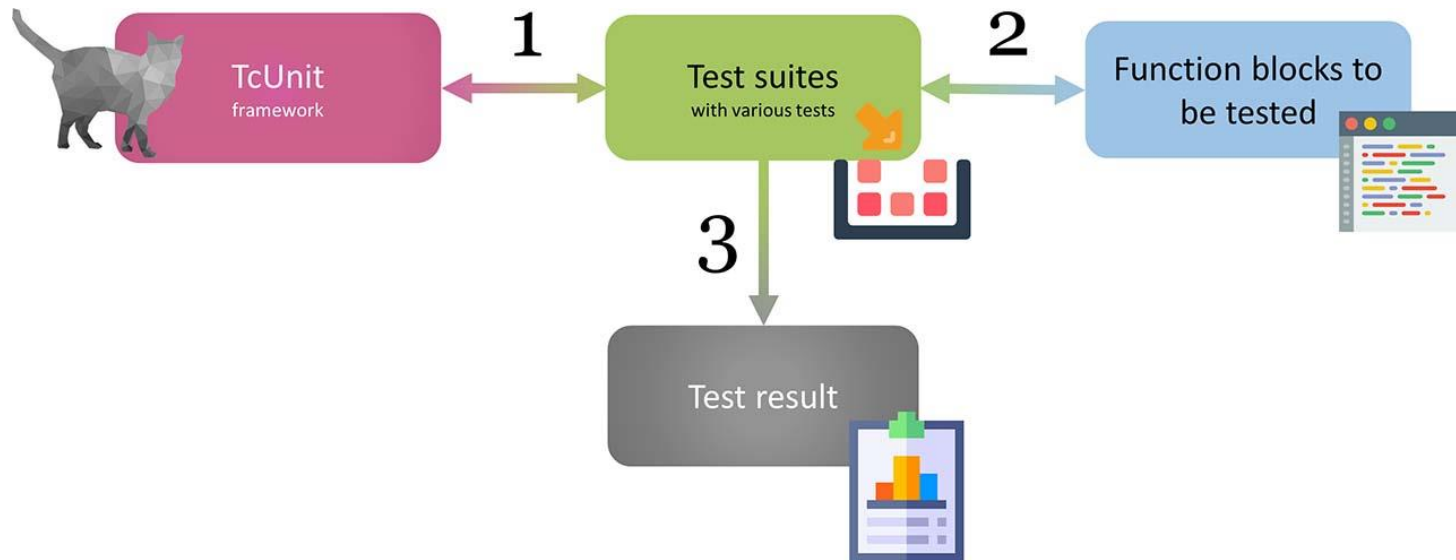


# ELT Beckhoff PLC Unit test and deployment framework

# TCUnit: Unit testing

- Possibility to write unit tests for your TwinCAT3 software, and having the results reported in a human-readable format for review [www.tcunit.org](http://www.tcunit.org)



# Deployment Method

- Usage of [Beckhoff Twincat Automation Interface](#)
  - Enables the automatic creation and manipulation of TwinCAT XAE configurations via programming/scripting code
  
- Configuration control: Used for easing the deployment process of the 132 Beckhoff PLCs to be used for M1 primary mirror of the Extremely Large Telescope

# Deployment Process

1. Configure yaml or XML file with list of PLCs where TC solution is to be patched
2. Program checks solution builds properly
3. Program goes one by one patching all PLCs
4. If a problem arises (likely a network problem), program stops



# Continuous Development and Integration

- Configure Jenkins job
- Uses a pool of PLC with dynamic allocation
- Usage of (again) TC Automation Interface
- All ELT systems required to use Beckhoff are also required to:
  1. Use TcUnit for testing
  2. Define static code check rules
  3. Every commit to ESO repo, project is built/deployed/tested