About Tycho, Maven, p2 and Target-Platforms: From Pain to Best Practice

Sascha Müller, Philipp M. Fischer and Tobias Schlauch
DLR (German Aerospace Center)
Simulation- and Software Technology
Lilienthalplatz 7, 38108 Braunschweig, Germany
Email: sa.mueller@dlr.de
Email: philipp.fischer@dlr.de
Email: tobias.schlauch@dlr.de

ABSTRACT

This talk shares our experience about setting up Tycho and Maven. Using Tycho and Maven in your build infrastructure can be very beneficial, but first it needs to be set up. In fact, this is the real challenge. Unfortunately, there is no real state-of-the-art or best practice about how to use this technology. Particularly, only little documentation exists. Most likely this is a consequence of everyone's individual project requirements and thus not allowing for the one ultimate answer. Nevertheless, when crawling through forums and mailing lists you can easily find other Eclipse fellows facing quite similar issues as you do. Still the answers to these common questions are rare. In this talk, we provide some of the common answers we came across in context of our project Virtual Satellite. Our talk helps you to find an easy start with Tycho.

Virtual Satellite is a framework based on Eclipse. The framework is used to develop different spacecraft related applications used productively in projects and departments. In addition, it serves as a basis for PhD and master theses which focus on exploring innovative approaches. To support both cases, we established a build infrastructure to build and test the Virtual Satellite framework and depending projects.

In the beginning of the talk, we describe how we initially set up Tycho for the framework. For that purpose, we explain, for example, how we use a p2 server to cache external dependencies of the Eclipse project and how it is used in the target platform definition. We also present best practices on using test fragments and defining a product that is finally deployed to another p2 repository. This setup is used for most of our projects and could be suitable as a starting point for your next one as well.

As an advanced use case, we explain how we use Tycho in the applications depending on the framework. An application`s target platform is based on a specific framework version. This dependency can raise issues on version management and easily break Tycho builds. We show how we solved the issues with the help of development, integration and release builds. Particularly, we explain how it simplified setting up new Tycho based projects using the Virtual Satellite framework.