

# OSGi in the TK - The BundleMaker

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# Initial Situation

# The Project TKeasy



- » Main application at Techniker Krankenkasse (TK)
  - » One of Germany's largest health insurance funds

- » 3-Tier architecture
- » Started in 1998
- » More than 100 applications
- » 65.000 Java classes
- » 6500 packages
- » 5 mio lines of code
- » 100 active developers

DT03 - Ten, Udo (041063 0034)

Daten Bearbeiten Ansicht Anwendungen Favoriten Verzweigen Fenster Hilfe

Versicherter | Zuordnungen | Kontakte (\*) | Einstufungen | Kundenprofil | Maßnahme | Service

Versicherten-Nr.: 041063 0034 RV-Nr.: 59041063F001

Geburtsdatum: 04.10.1963 Alter: 41

Wohnadresse: Herr Udo Ten  
Bärenallee 25  
22041 Hamburg  
 Postfachadresse

Status: Mitglied seit 15.06.1995  
versicherungspflichtig / KG-Bezug

Telefon (privat): 040 / 6909-2434  
Telefon (mobil):  
Telefon (dienstl.):  
Fax:  
E-Mail: Udo.Ten@tk-online.de  
Bankverbindung:  Vollstreckungskonto

Familie (2 / 2):

Vers. Nr.	Status	Vorname	Nachname	Beginn	Ende	Grund	gepr. in	gepr. bis	24
260598 7022	Tochter	Bianca	Ten	01.07.2004			04.2004	11.2004	24
250296 7010	Tochter	Emie	Ten	01.01.2004			04.2004	11.2004	24

Bemerkung: EE: DM

Gesetzl. Vertreter  Datenschutz  EaB  Kundenbindung

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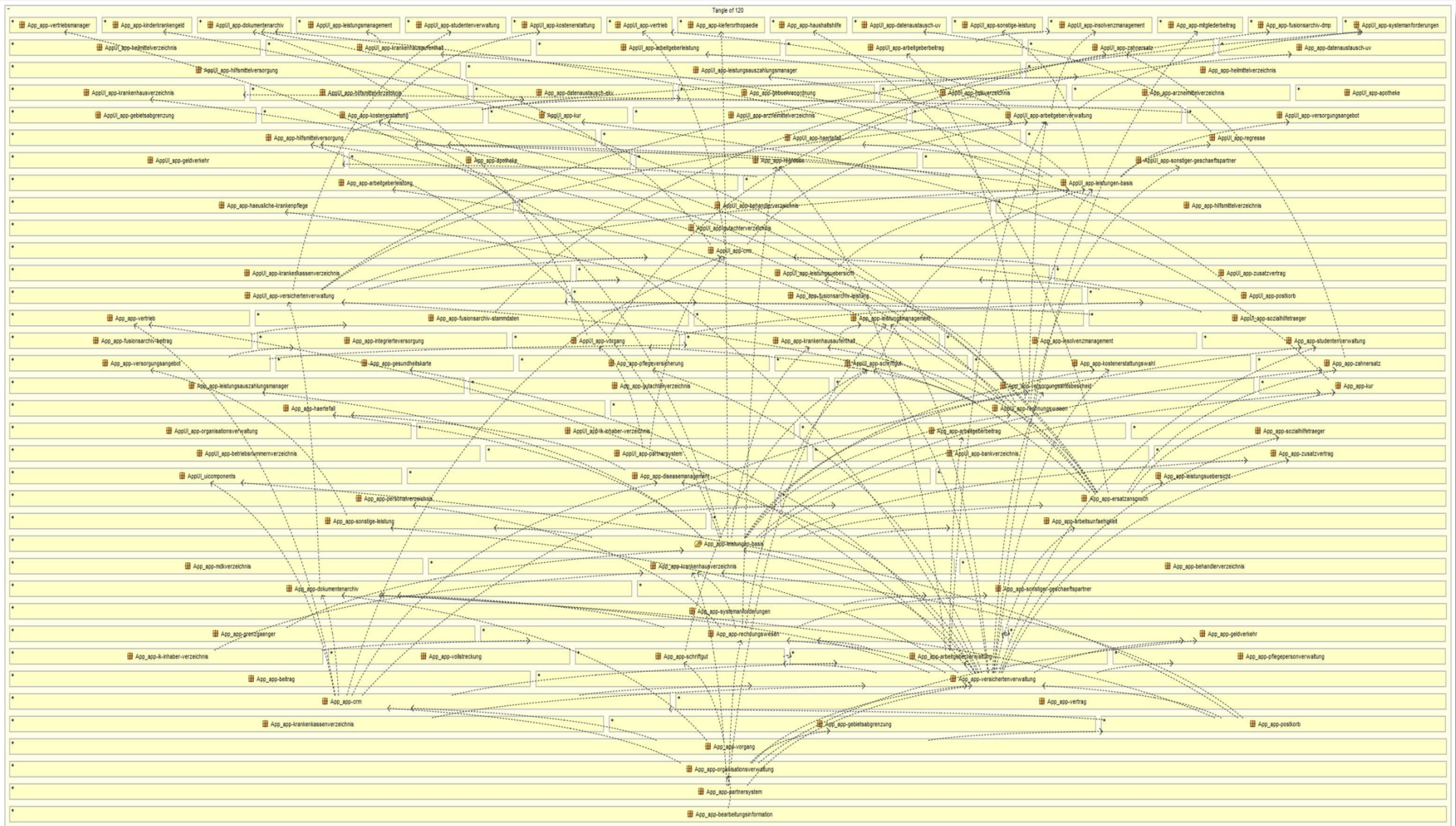
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# Dependency problems



# Why Modularity?

- » Need to modularize the application
  - » Current focus: the module layer
  - » Easier maintenance
  - » Reuse of components in other contexts

# Why OSGi?

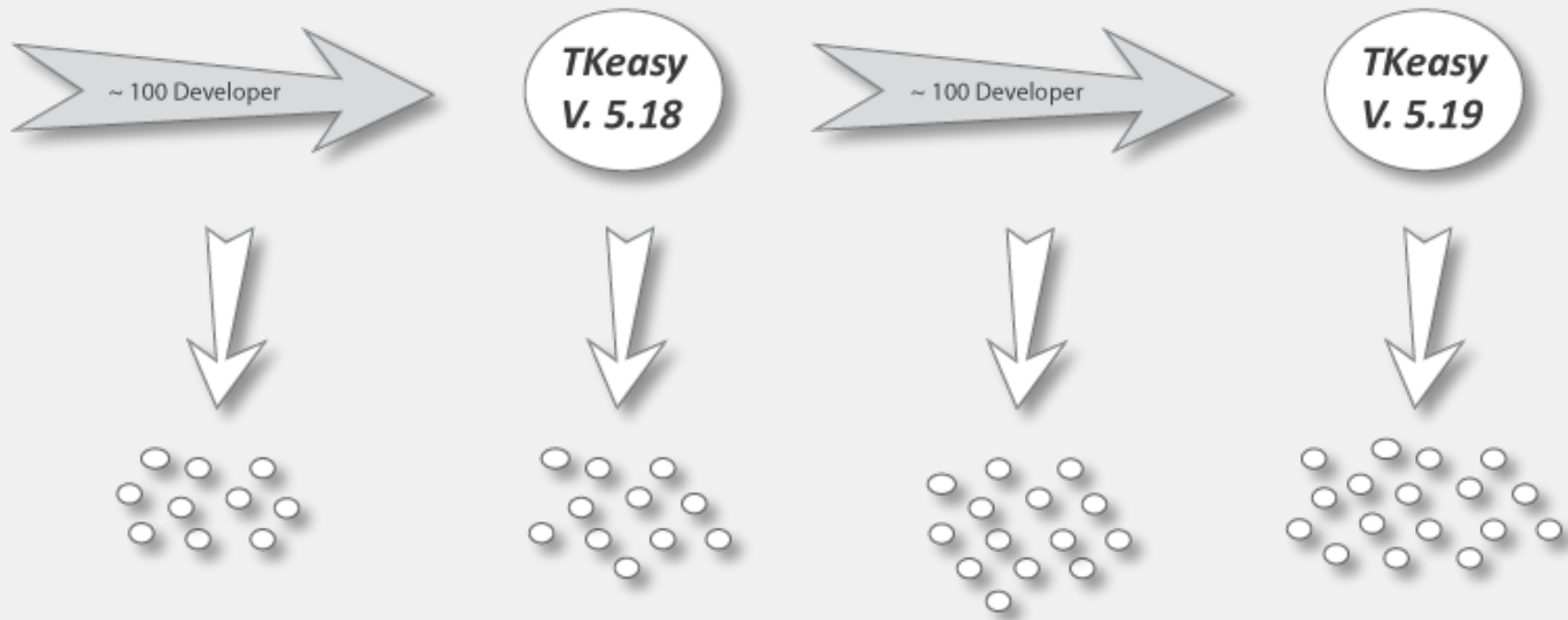
- » „The“ module system for Java
- » Open infrastructure: Extender Pattern, Hooks
- » Future: introduce service layer

# The Migration Path

# The Development Cycle

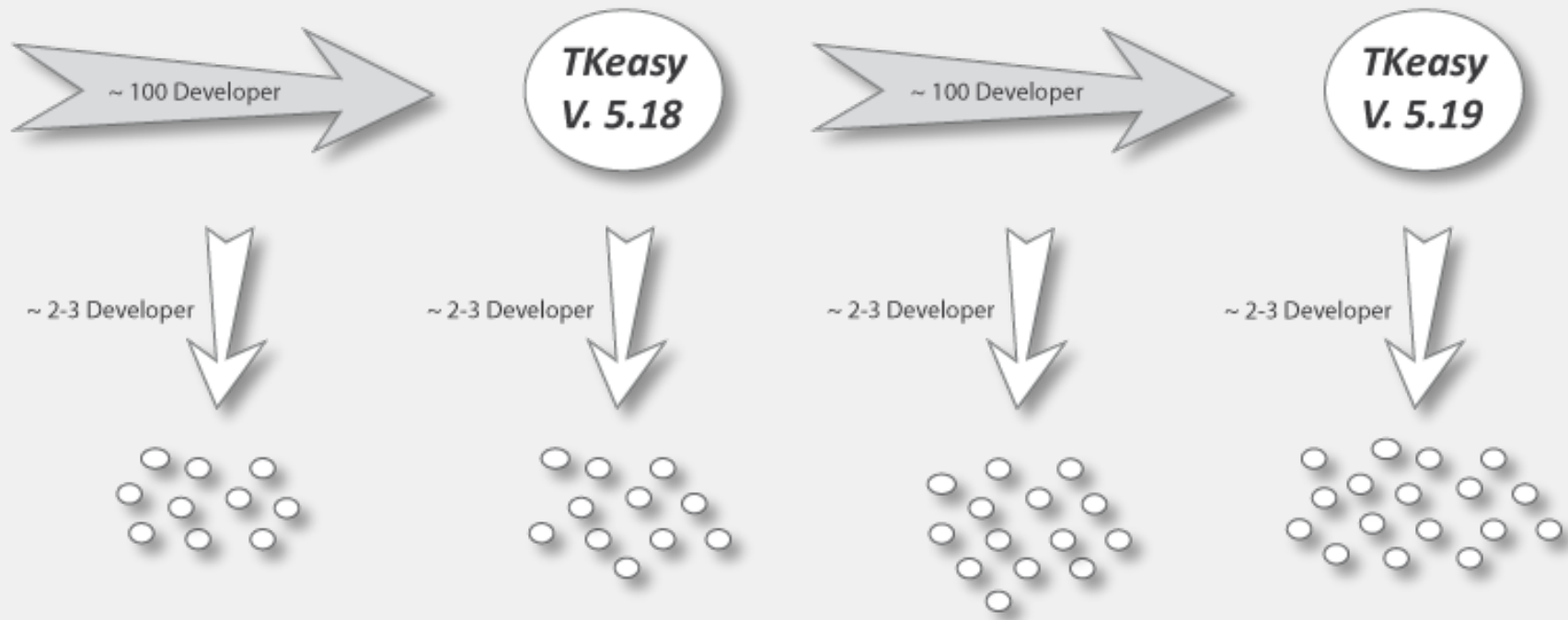


# Continuous Migration I

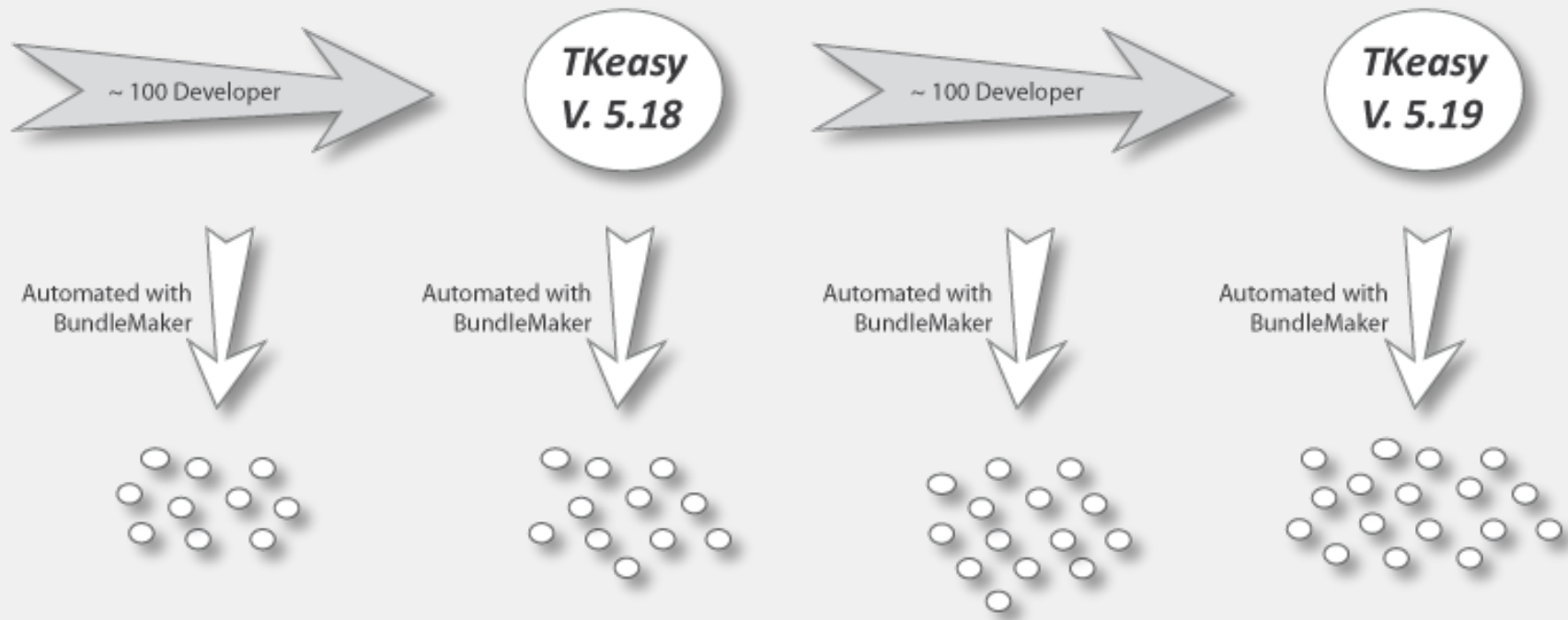




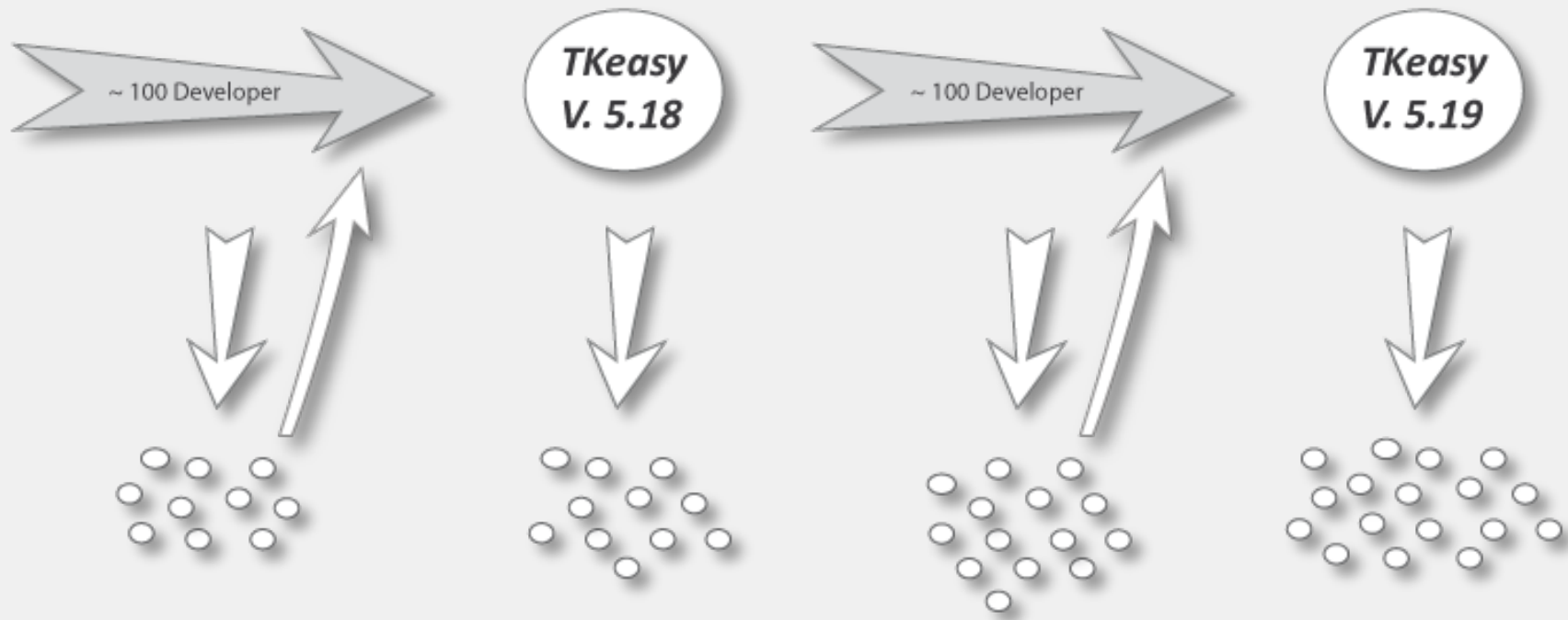
# Continuous Migration II



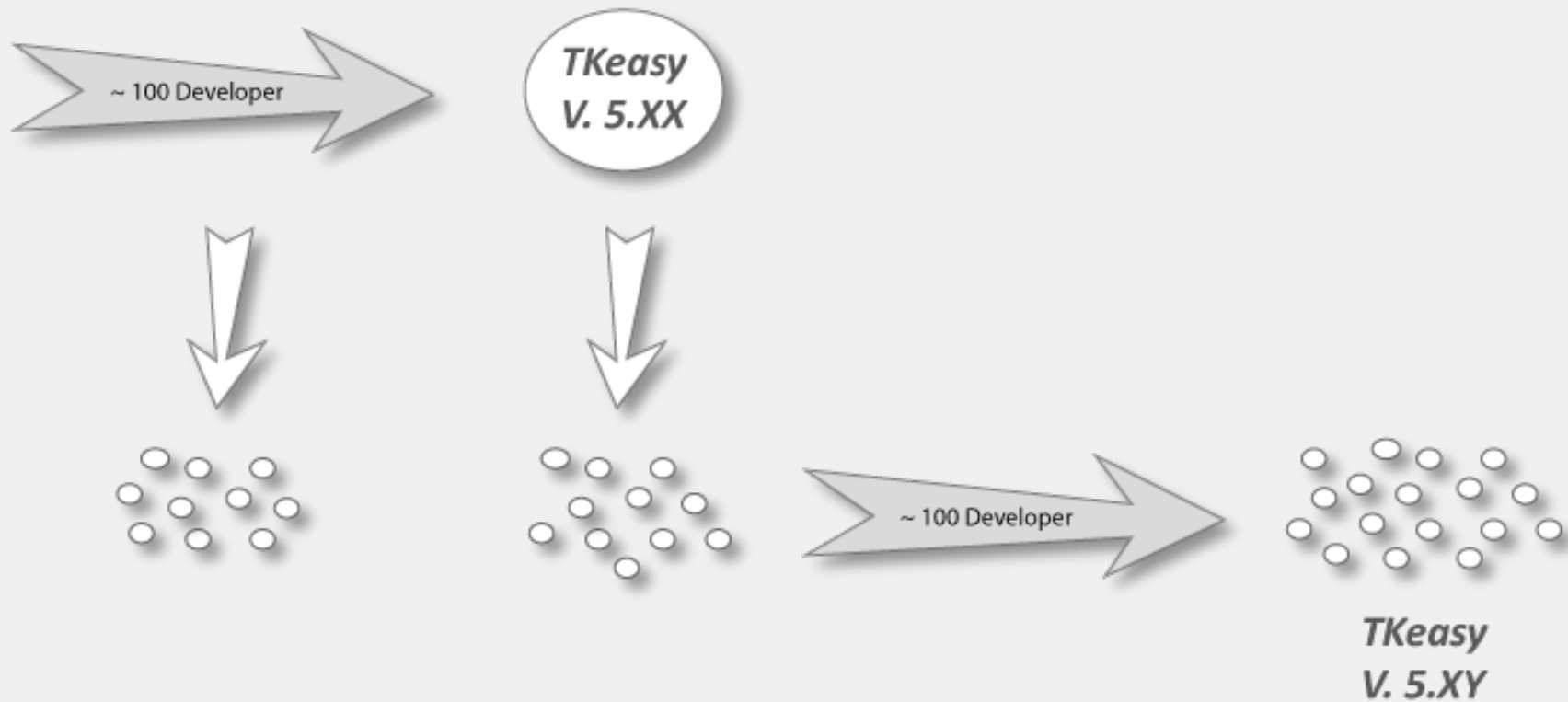
# Continuous Migration III



# Continuous Migration IV



# The „Final Transformation“



# The BundleMaker

# BundleMaker „Open Source Edition“

- » Alpha Version
- » <http://www.bundlemaker.org>
- » Source code available
  - » <http://github.com/wuetherich/bundlemaker>
  - » EPL
- » Goal: Open platform for software analysis applications

# BundleMaker Concepts

1. Parse

2. Analyse

3. Transform

4. Export

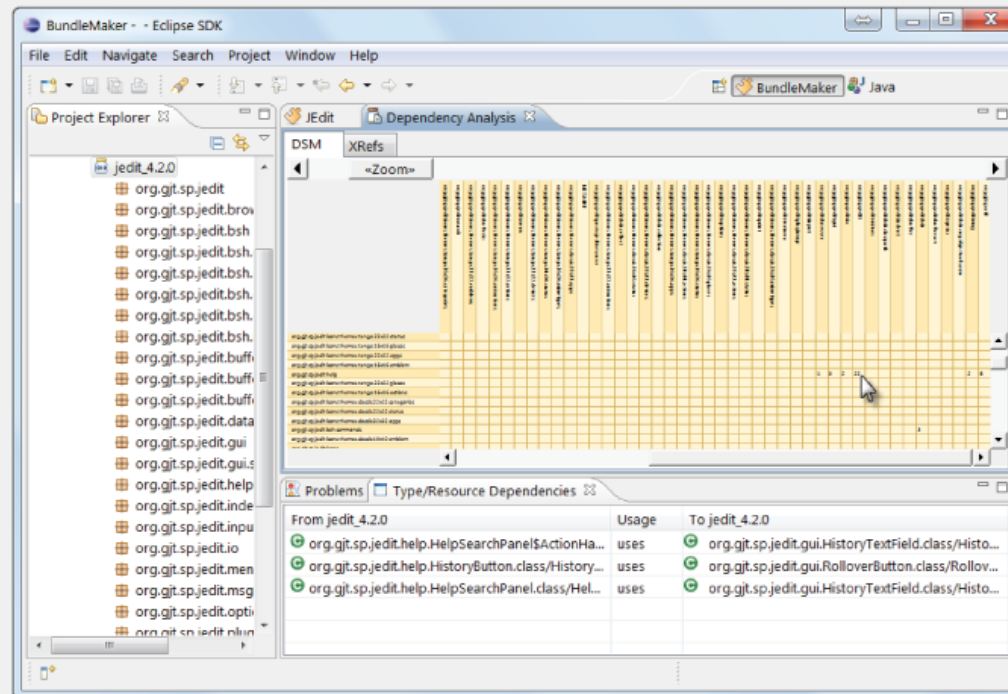
Classes  
(Folder, JAR)

Source-Files  
(Folder, ZIP)

Bundles  
(Folder, JAR)

Eclipse-Projects  
(JDT, PDE)

Maven-Projects



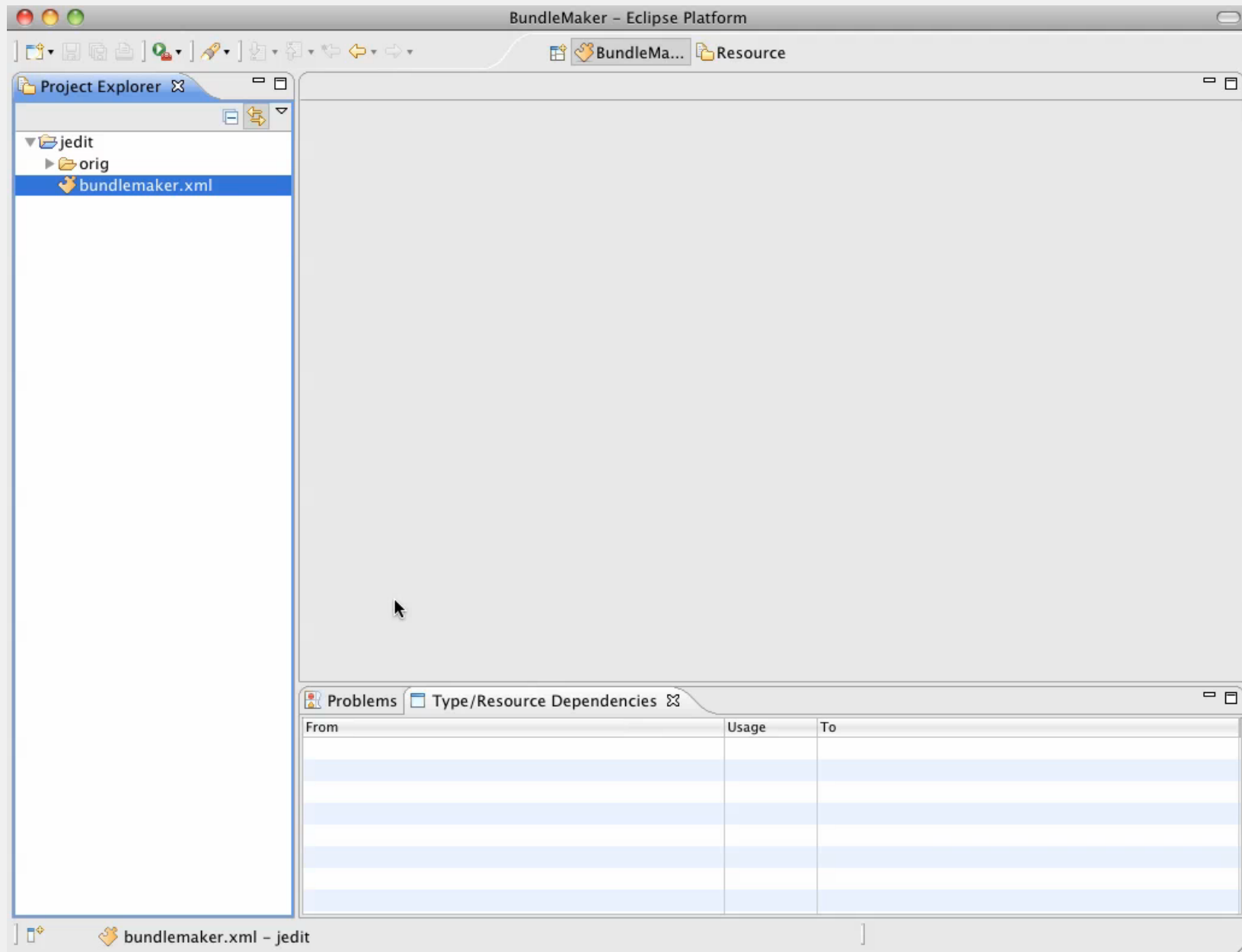
Bundles

PDE-Plug-in-Projects

JDT/BND-Projects

Maven-OSGi-Projects

# BundleMaker - Analyze





# BundleMaker – Transform

The screenshot shows the Eclipse IDE interface for the BundleMaker tool. The title bar reads "BundleMaker – jedit/bundlemaker.xml – Eclipse Platform". The Project Explorer on the left shows a project named "jedit" with sub-projects "orig", "bundlemaker.xml", "jedit", "JEdit\_1.0.0", and "JRE\_JRE". The main Content view displays a table of resources:

Resource	Analyz	Analyze Source
▶ JEdit [1.0.0]	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Below the table are several buttons: Edit..., Add..., Add archives..., Add external archives..., Remove, Up, and Down. A "Parse project" button is located at the bottom right of the Content view. The Problems view at the bottom is currently empty.

# BundleMaker - Export

The screenshot displays the BundleMaker Eclipse plugin interface. The Project Explorer on the left shows a project named 'jedit' with the following structure:

- orig
- bundlemaker.xml
- jedit
  - JEDIT\_BASE
    - jedit.bsh\_0.0.0
    - jedit.util\_0.0.0
  - JEDIT\_UI
    - JEdit\_1.0.0
  - JRE\_JRE

The Dependency Analysis window on the right is active, showing a DSM (Dependency Structure Matrix) view. The matrix displays dependencies between bundles:

Bundle	Dependency	Count
JEDIT_UI/JEdit_1.0.0	JEDIT_BASE/jedit.util_0.0.0	299
JEDIT_BASE/jedit.util_0.0.0	JEDIT_UI/JEdit_1.0.0	4

The Problems window at the bottom shows 0 items under the 'Type/Resource Dependencies' tab.

**Thank you very much!**