



IBM Software Group

Rational UCM Workshop

Rational. software

IBM 软件部 孙昕



ON DEMAND BUSINESS™

内容

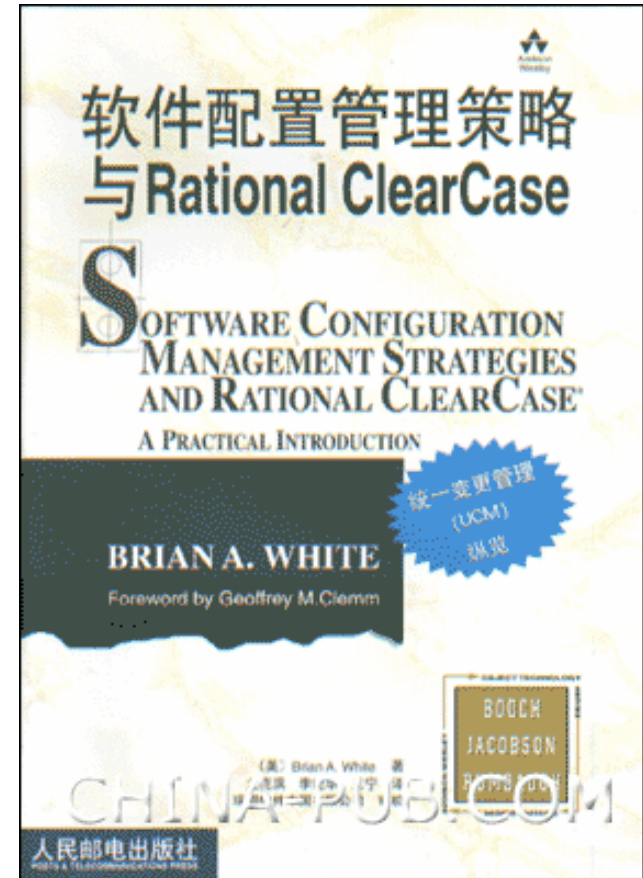
- 什么是软件配置管理
- 软件配置管理对你有什么帮助
- **IBM Rational** 的软件配置管理流程 UCM
- 制造行业的挑战与应对之策
- 场景演示



什么是软件配置管理？

软件配置管理就是关于
如何管理软件的变更

Brian White
软件配置管理策略与
Rational ClearCase



上海通用汽车的柔性化生产线

- 配置管理就是在生产需要的时候，及时提供正确版本的零件



HRV



EXCELLE



REGAL



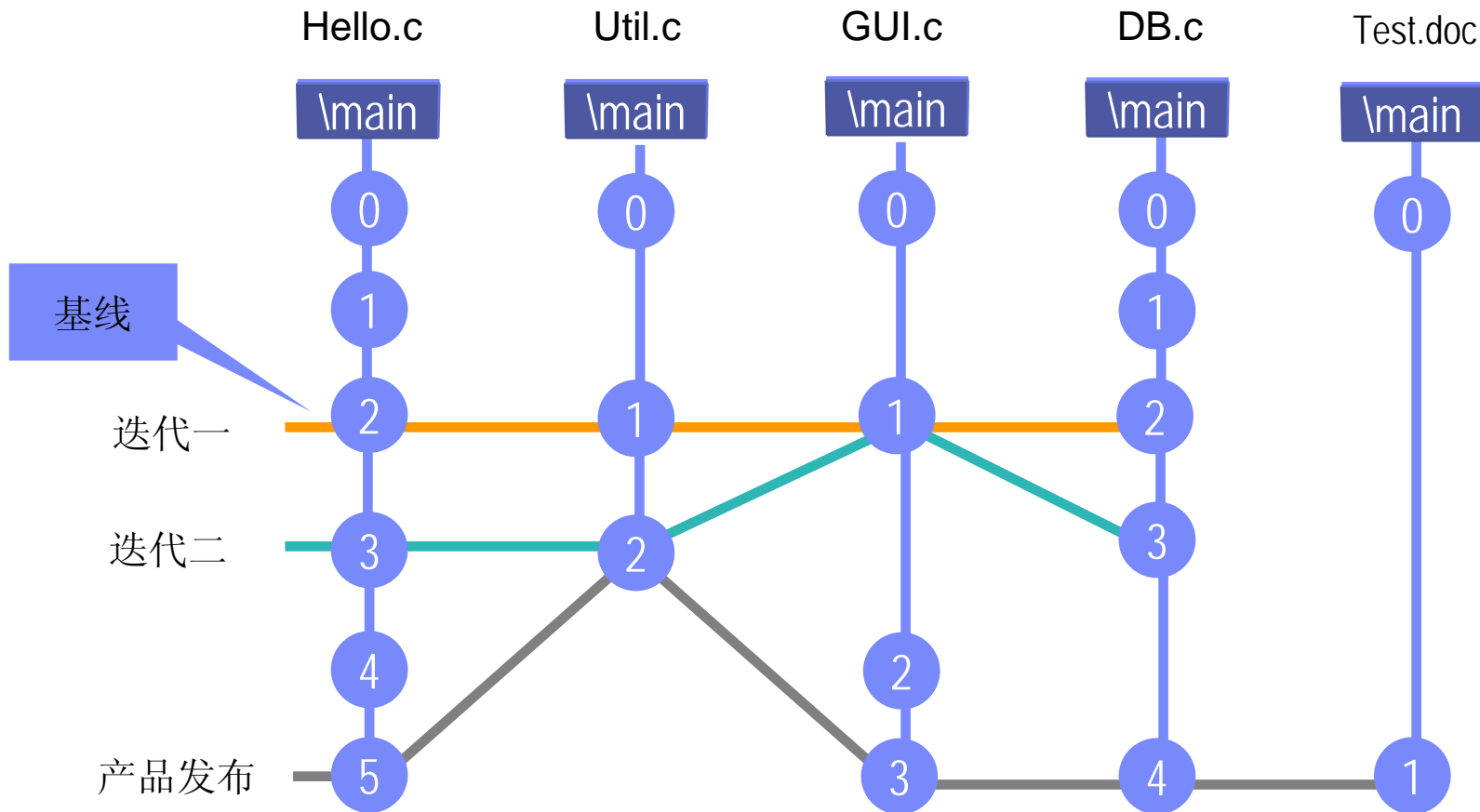
GL8

内容

- 什么是软件配置管理
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管理开发过程中的基线

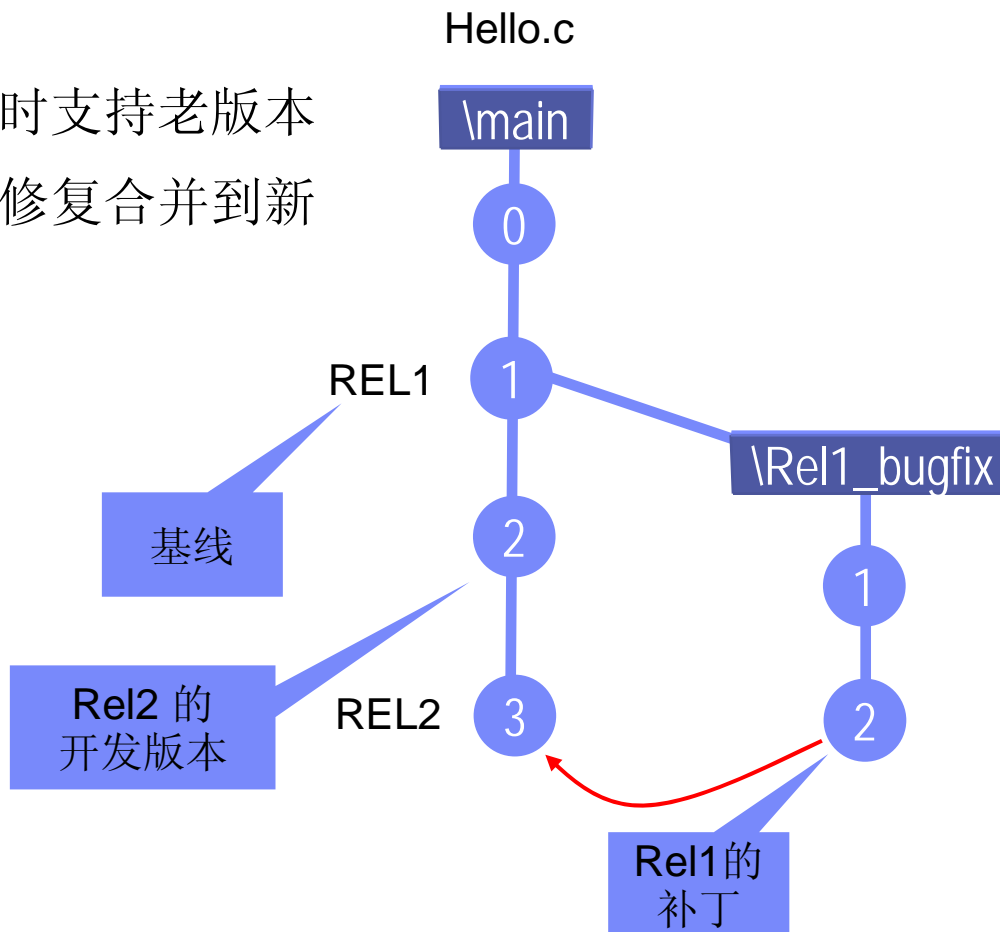


随时可以回访到系统开发过程中任一历史版本



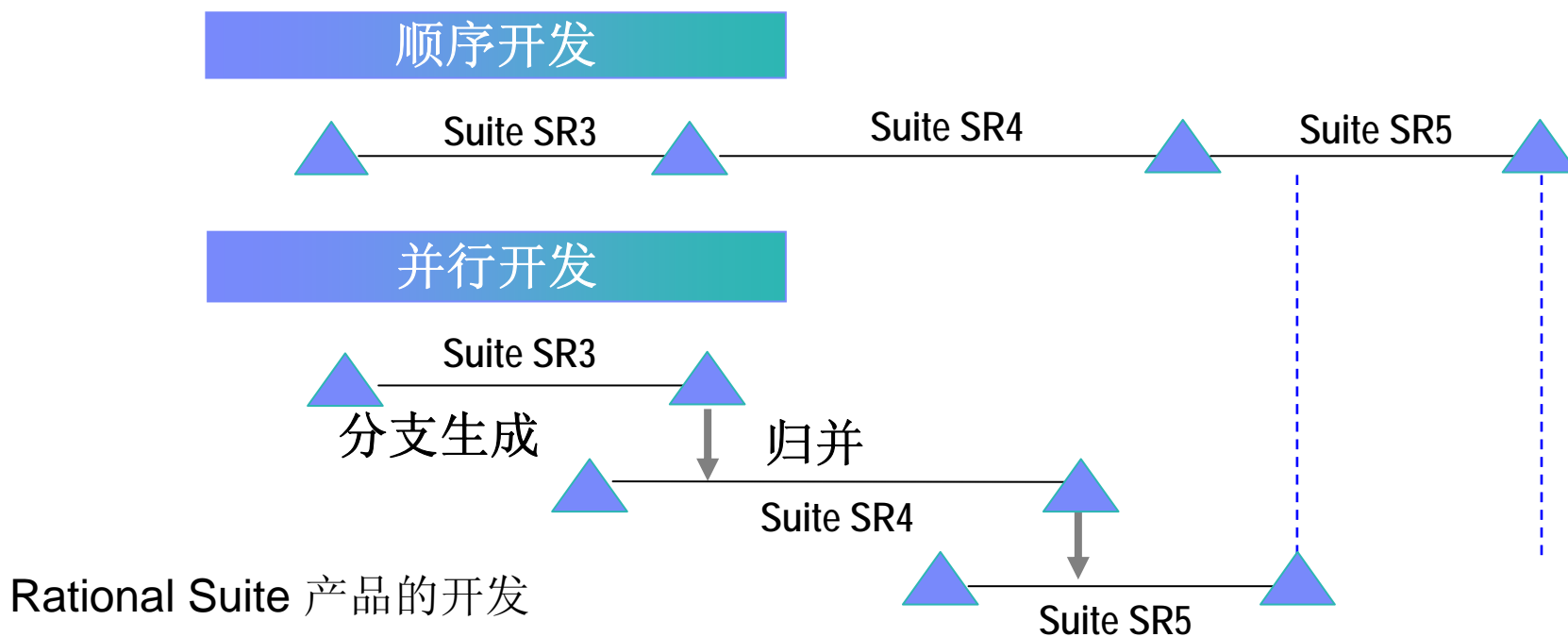
防止发布错误的版本

- 在开发新版本的同时支持老版本
- 需要时可以将缺陷修复合并到新版本



支持并行开发

- 串行开发可能是理想的，但今天这种方式既不有效也不实用
- 开发人员不应等待其他开发人员的工作完成
- 隔离的配置是进行有效并行开发的关键

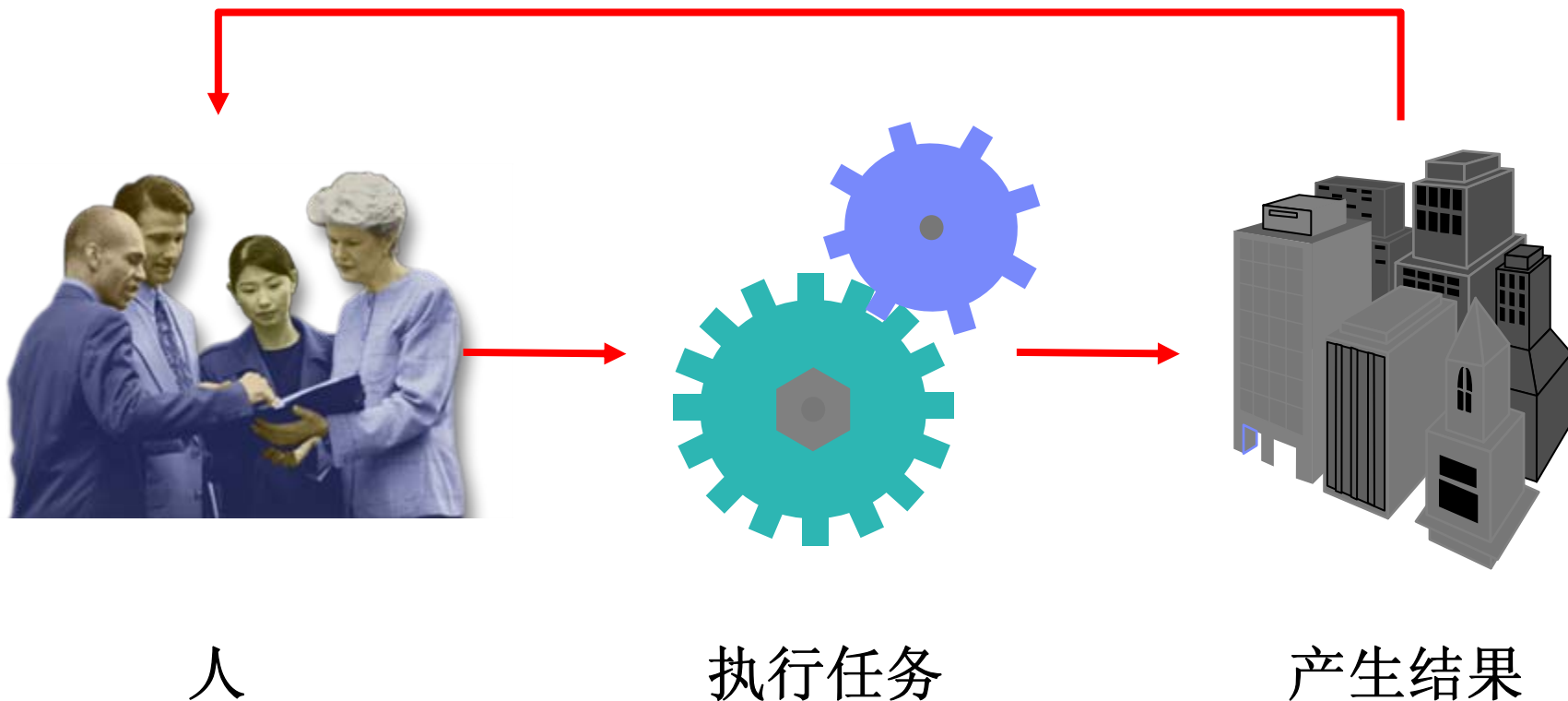


内容

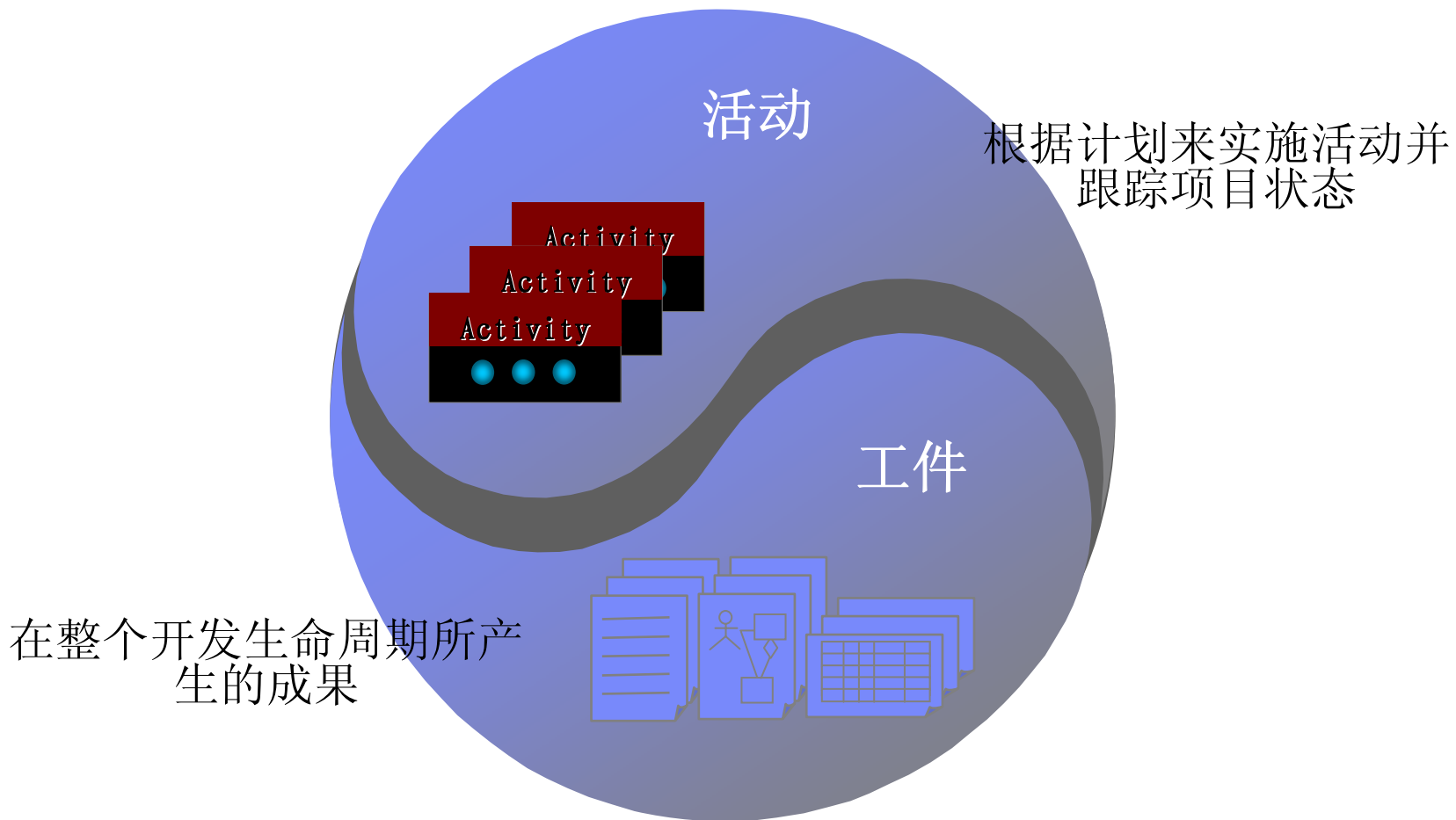
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变更中的公共要素



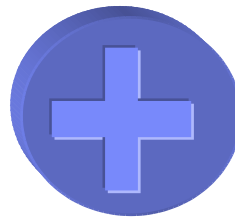
统一变更管理是基于活动的



统一变更管理(UCM)平台

- ◆ 最强大的软件资产管理解决方案
- ◆ 超过 240,000 用户
- ◆ 并行开发自动化
- ◆ 易于使用, 高度灵活的缺陷及变更跟踪
- ◆ 超过 160,000 用户
- ◆ 强大及可定制的项目统计报告

IBM Rational ClearCase



IBM Rational ClearQuest



UCM 对象介绍一



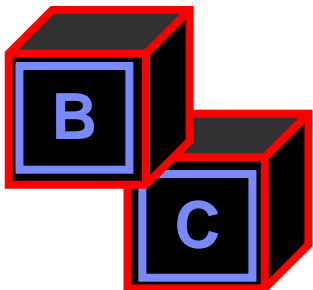
Project

■ 项目 (Project)

- ▶ 与软件开发过程中的项目概念直接对应
- ▶ 开发人员必须参加相关的项目才能进行开发

■ 活动 (Activities)

- ▶ 所有变更均同活动相关
- ▶ 自动收集变更集(change set)



■ 构件 (Components)

- ▶ 将构成子系统的相关工件进行组织
- ▶ 基线操作的基本单位

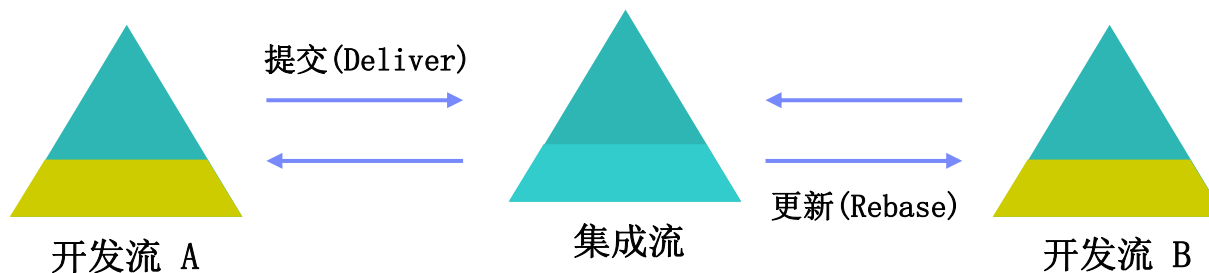
提升了抽象层次



UCM 对象介绍二

■ 流 (Streams)

- ▶ 每个项目都有一个唯一的集成流，在集成流上同其他用户共享工作
- ▶ 开发人员可以有自己的开发流，同其他用户的工作隔离



■ 基线 (Baselines)

- ▶ 表示整个构件的版本
- ▶ 支持可配置的提升级别



提升了抽象层次



活动的组织与管理

Rational ClearQuest

管理活动

- ◆ To Do Lists
- ◆ Workflow

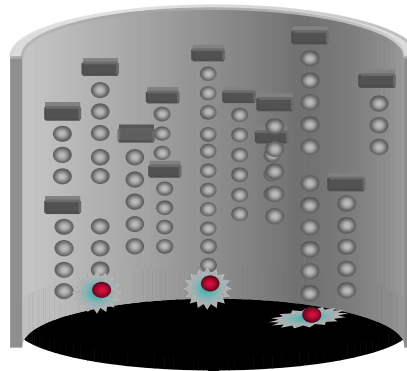
ClearQuest: 组织好的活动

Request	Priority	Owner
Special Promo	1	Terry
Bug 527	2	Sandy
Add GUI button	2	Kim

Rational ClearCase

管理工件

- ◆ Versioning: code, models, XML, HTML
- ◆ Parallel development



活动自动收集变更集(change set)

Rational ClearQuest

管理活动

- ◆ To Do Lists
- ◆ Workflow

ClearQuest:有组织的活动

Request	Priority	Owner
Special Promo	1	Terry
Bug 527	2	Sandy
Add GUI button	2	Kim

Rational ClearCase

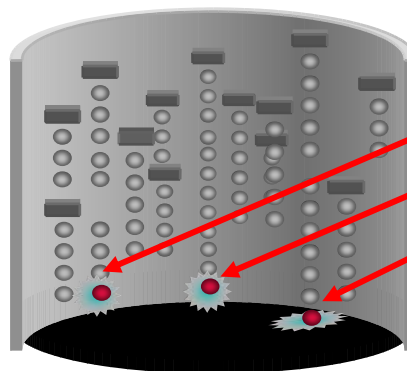
管理工件

- ◆ Versioning: code, models, XML, HTML
- ◆ Parallel development

变更集

Special Promo

a.html	V5
c.xml	V3
b.jpg	V8



将活动和工件结合在一起



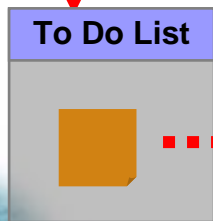
UCM workflow统一整个开发团队

Organized Activities

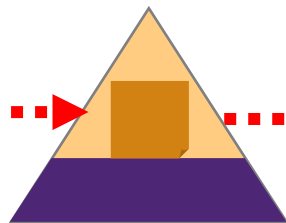
Request	Priority	Owner	Project
Bug 98	1	Sam	WebRelay
Bug 527	3	Sandy	WebRelay
Add GUI button	1	Kim	WebRelay



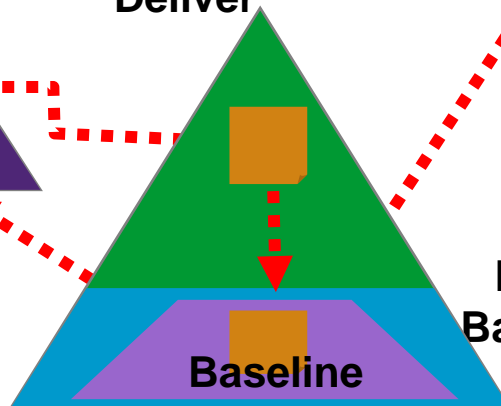
项目经理



Work On



Deliver



Rebase

Make Baseline

Promote Baseline

Production

Acceptance

System



开发人员



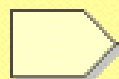
集成人员



统一团队中的各种角色



配置经理



设置 CM 环境



制定 CM 策略



编写 CM 计划



创建部署单元



报告配置状态



执行配置审核



变更控制经理



建立变更控制流程



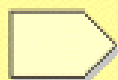
复审变更请求



确认重复或拒绝的 CR



集成员



创建集成工作区



建立基线



晋升基线



核实工作版本的变更



任意角色



创建开发工作区



进行变更



交付变更内容



更新工作区



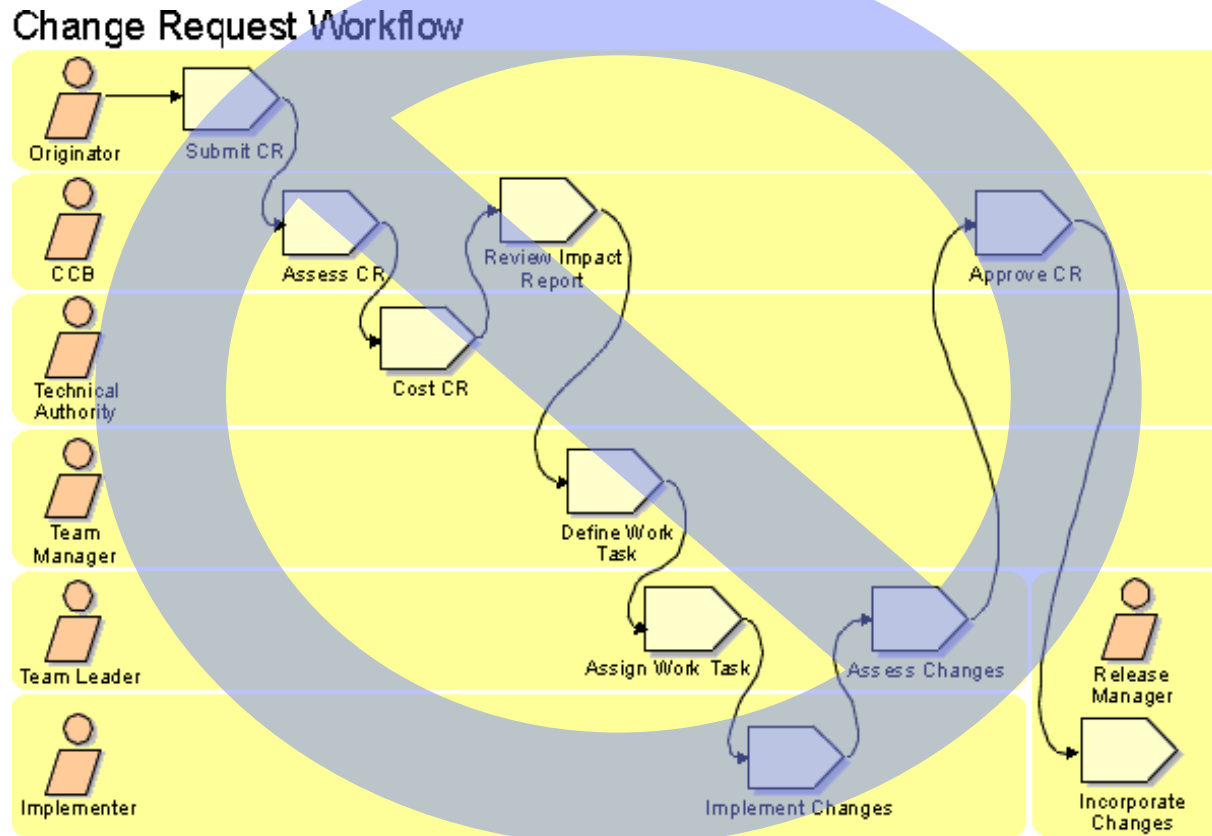
提交变更请求



更新变更请求

等等, 这不是我的流程...

Change Request Workflow



以你自己的流程进行工作

有组织的活动

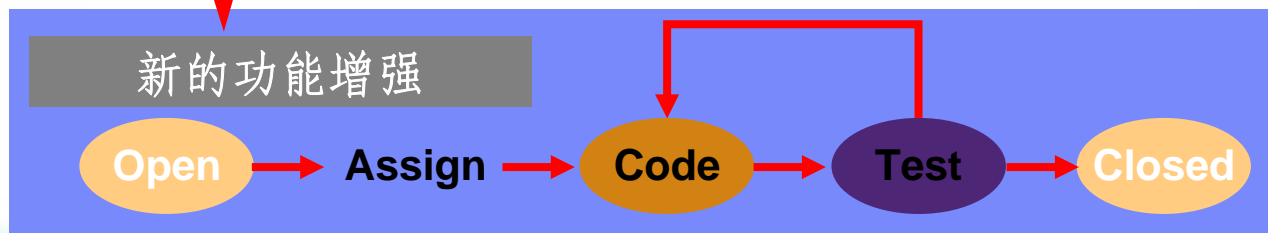
Request	Priority	Owner	Project	Status
Bug 98	1	Sam	WebRelay	Code
Bug 527	3	Sandy	WebRelay	Open
Add GUI button	1	Kim	WebRelay	Code



开发人员



分析人员



项目经理



集成人员



测试人员



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制造业IT所面临的挑战

- 竞争环境提出的挑战：速度
- 产品的品质要求：质量
- 价格优势的保持：成本控制
- 满足不断变化的客户需求：客户定制



应对之策

- 市场部门、研发部门、制造部门统一协作的相应平台：**速度**
- 统一的配置管理系统保证开发、变更、上线的管理：**高质量**
- 准确的版本、合理的工作分配...：**成本**
- 适应业务不断变化的流程改经：**定制灵活，随虚应变**



有组织的活动

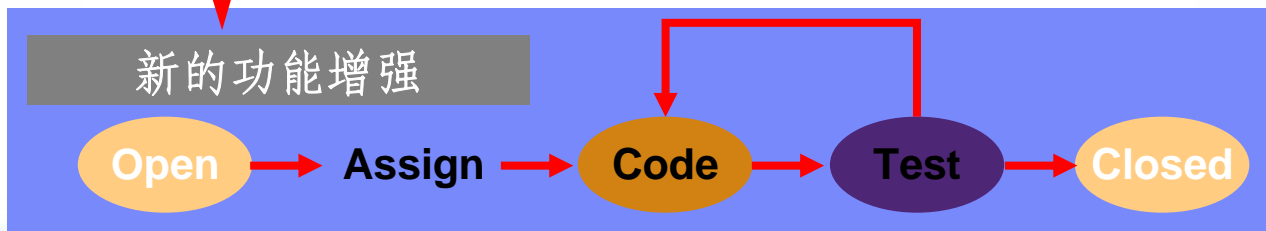
Request	Priority	Owner	Project	Status
Bug 98	1	Sam	WebRelay	Code
Bug 527	3	Sandy	WebRelay	Open
Add GUI button	1	Kim	WebRelay	Code



市场部门



制造部门



研发部门：
项目经理



研发部门：
集成人员



研发部门：
测试人员



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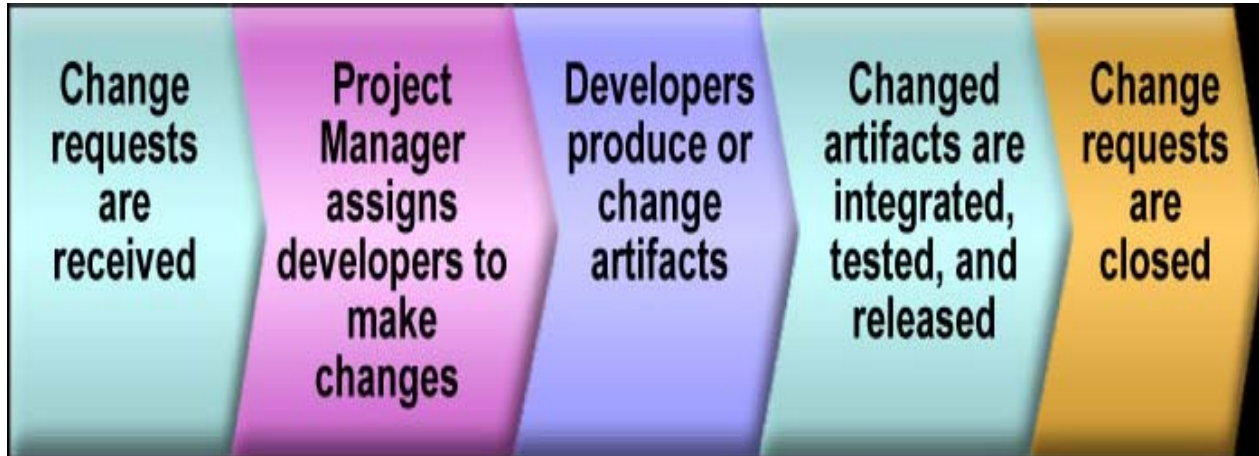
变更生命周期



市场部门



制造部门



市场部门提交申请



IBM Rational ClearQuest - [MDB : (Act: Ent: ... Activity)]

文件(F) 编辑(E) 视图(V) 操作(A) 查询(Q) 窗口(W) 帮助(H)

运行查询(R) 新建(N) Defect

Headline	id
新功能需求1	MDB00000012

结果集 | 查询编辑器 | 显示编辑器 /

主要项 | 统一变更管理 |

标识: MDB00000012 所有者: 市场部

状态: Active

标题: 新功能需求1

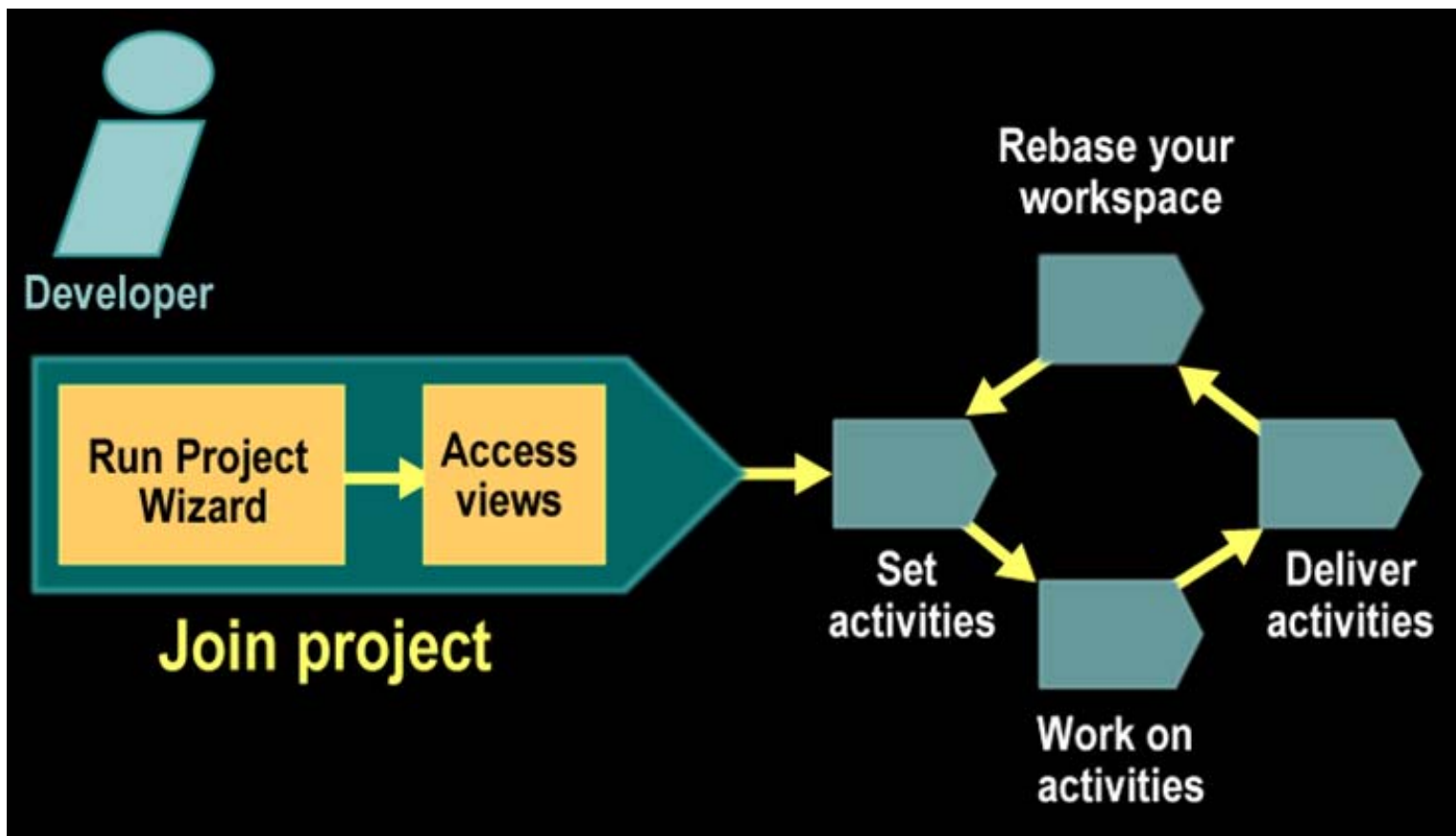
描述: 增加新功能1....

应用 还原 打印记录 操作

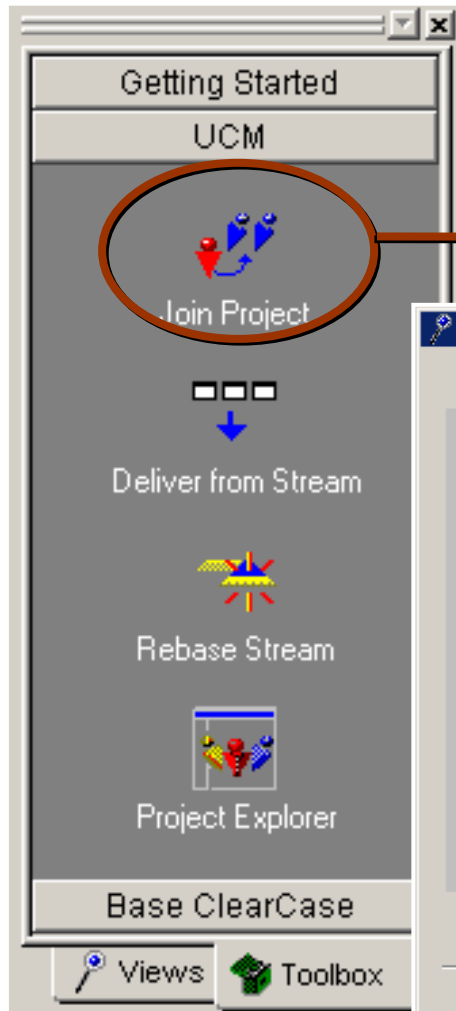
工作空间: 查询、图表、报告

- 个人查询
- 公共查询
 - TM 图表
 - TM 报告
 - TM 查询
- UCMSystemQueries
- UCMUserQueries
- 打印报告格式
 - BaseCMAActivity
 - UCMProject
 - UCMUtilityActivity
 - 用户
 - 电子邮件规则
 - 缺陷
 - 需求
- Activity
- defect

设计部门开发

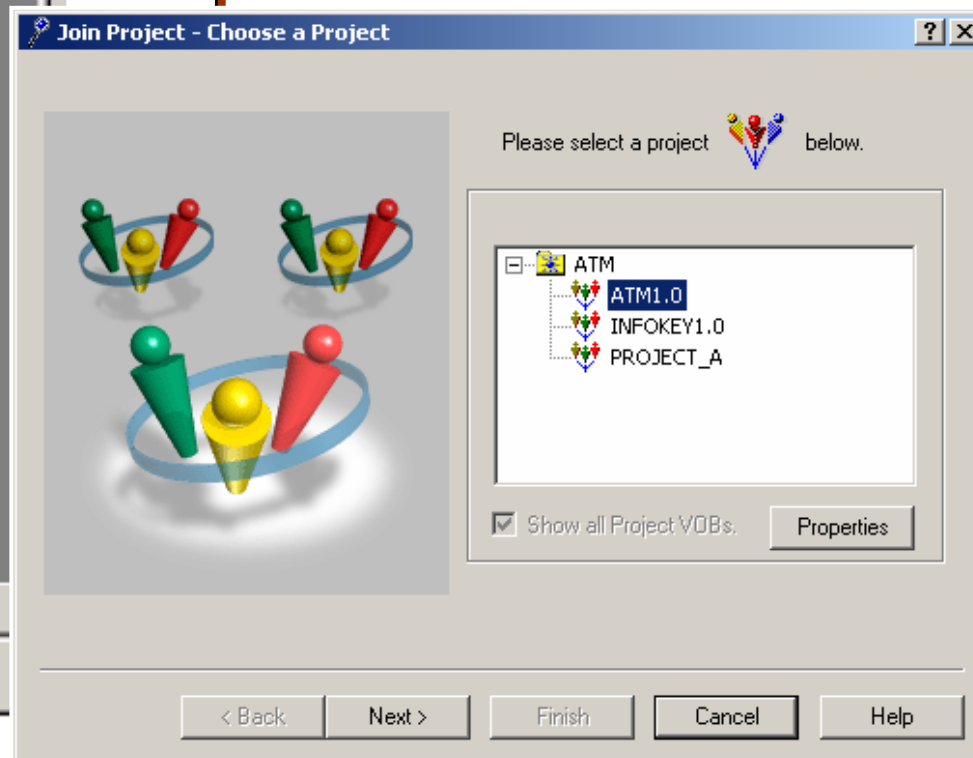


设计部门开发

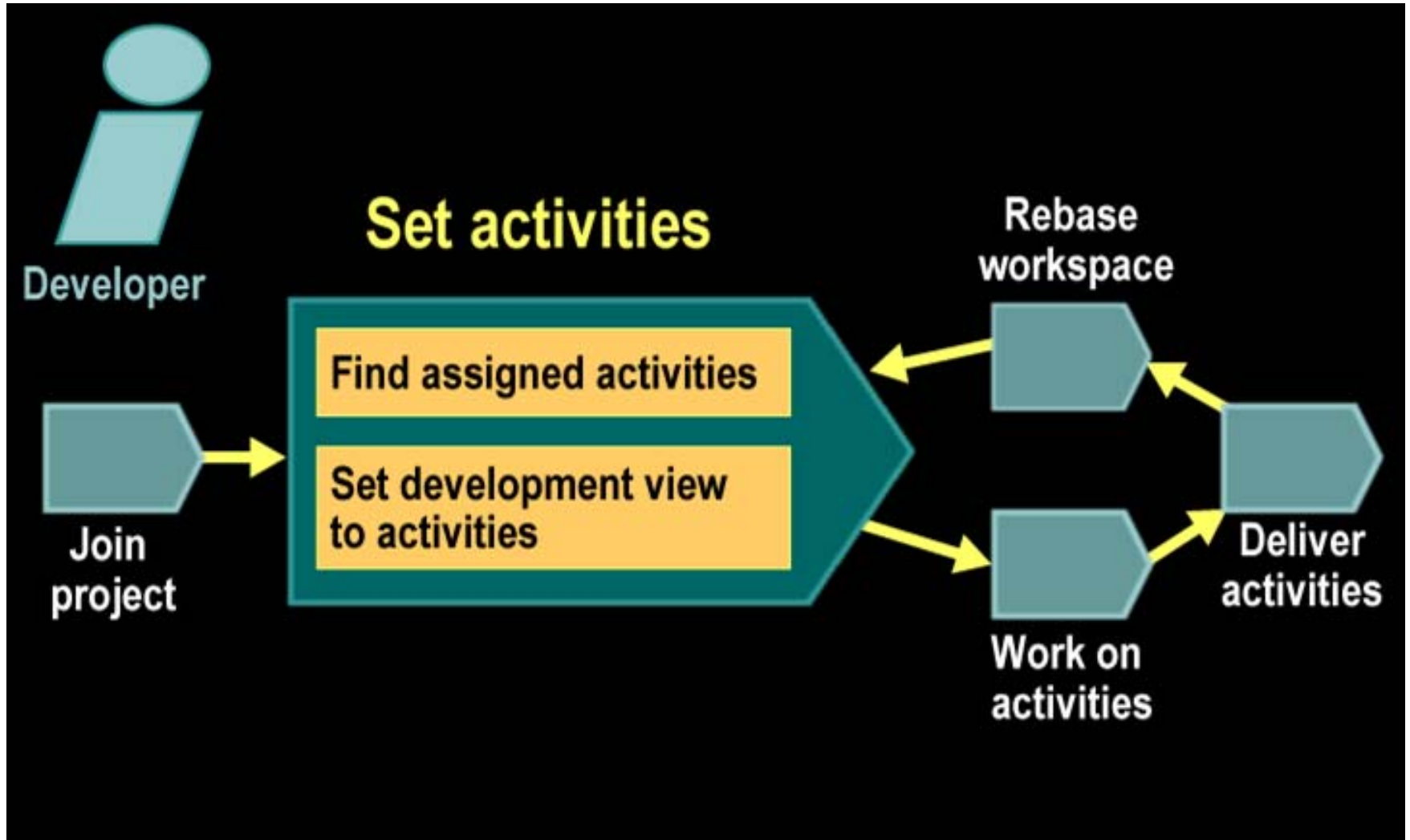


Use the Join Project Wizard to

- ▶ Choose the project you want to join
- ▶ Create a development stream, development view, and integration view



设计部门开发



设计部门开发

1
Double-click the **MyToDoList *** query to find all activities assigned to you

Headline	State	UCM Project	UCM St
▶ ATM banner should display the new name	Opened	ATM1.0	pat_ATM1
Fix CLI interface	Submitted	ATM1.0	
Generally poor performance on input	Opened	ATM1.0	pat_ATM1
Incorrect wording on the PIN prompt	Opened	ATM1.0	pat_ATM1.0
Fixing the typo in the copyright	Opened	ATM1.0	pat_ATM1.0

2
Click an activity in the **Query Builder** pane to display its details below

Result set / Query editor / Display editor /

History Unified Change Management
 Main Notes Resolution Attachments

ID: ATM00000003 State: Opened
 Headline: ATM banner should display the new name of our bank.
 Priority: 1-Resolve Immediately Keywords:
 Severity: 1-Critical
 UCM Project: ATM1.0 Symptoms:
 Owner: pat
 Description: Need to update atm.pl so that "SmallBank" is changed to "BigBank."

Record: 1 Count: 5

设计部门开发

Rational ClearQuest - [ATM (MyToDoList * (All_UCM_Activities))]

File Edit View Actions Query Window Help

Run Query New Defect

Headline	State	UCM Project	UCM Stream	View	ID
ATM banner should display the new name	Opened	ATM1.0	pat_ATM1.0	Pat_ATM1.0	ATM00000003
Fix CLI interface	Submitted	ATM1.0			ATM00000011
Generally poor performance on input	Opened	ATM1.0	pat_ATM1.0		ATM00000008
Incorrect wording on the PIN prompt	Opened	ATM1.0	pat_ATM1.0		ATM00000007
Fixing the typo in the copyright	Opened	ATM1.0	pat_ATM1.0		ATM00000006

Result set Query editor Display editor

Select View

Select a ClearCase view to work in:

- UCM Projects:
 - ATM1.0
 - pat_ATM1.0
 - Pat_ATM1.0

Show Only My Streams Show Only My Views

OK Cancel Help

Unified Change Management

Resolution Attachments

State: Opened

Print Record

Actions

- Resolve
- Modify
- Duplicate
- Postpone
- Delete
- WorkOn

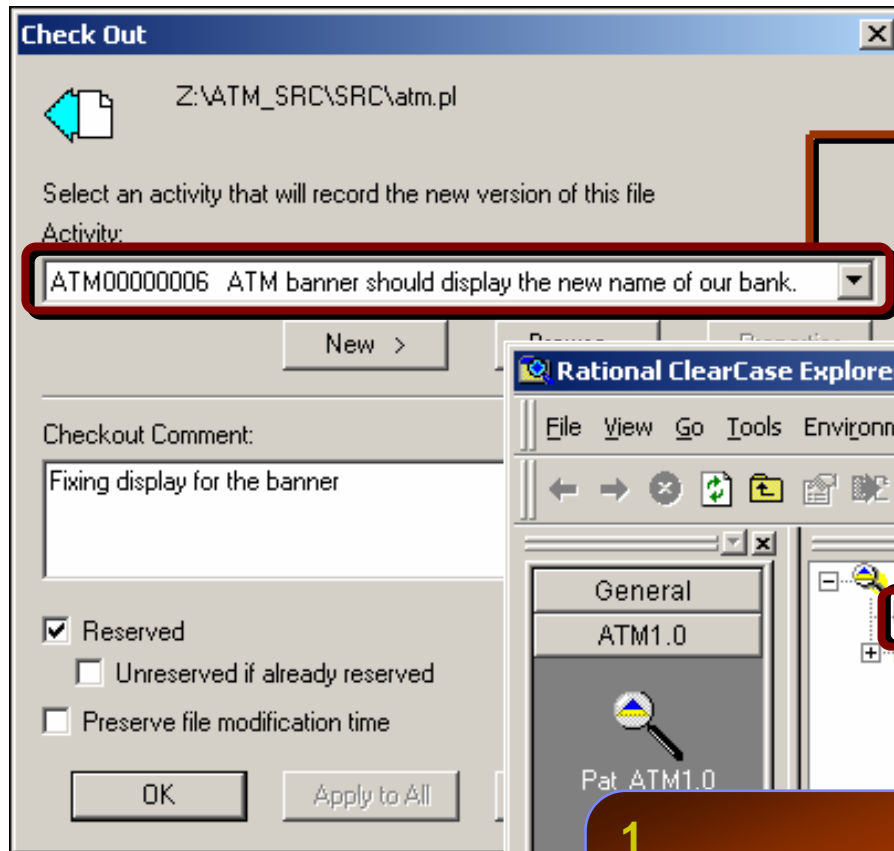
changed to "BigBank."

Record: 1 Count: 5

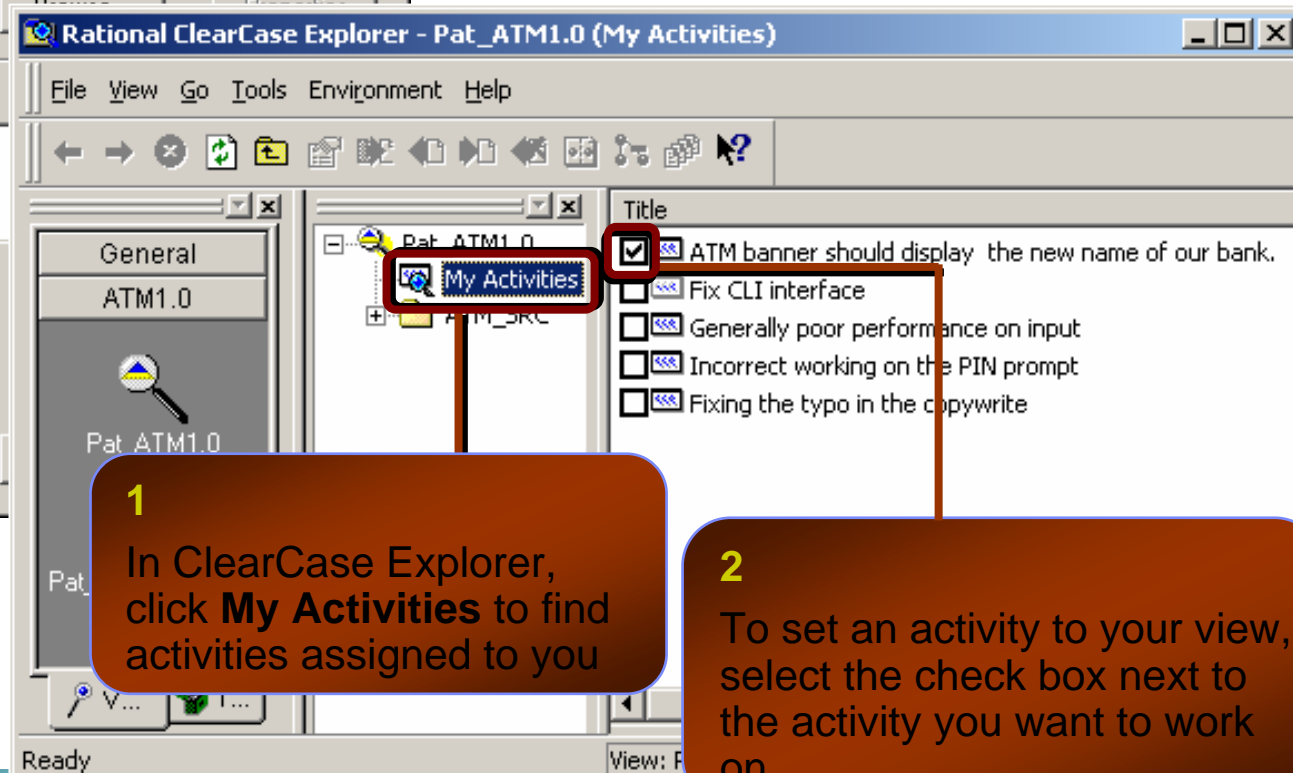
1 Click the WorkOn action

2 Select your development view from the list to set the activity to it

设计部门开发



Find and set an activity by selecting it from the ClearCase **Check Out**, **Check In**, and **Add to Source Control** dialog boxes



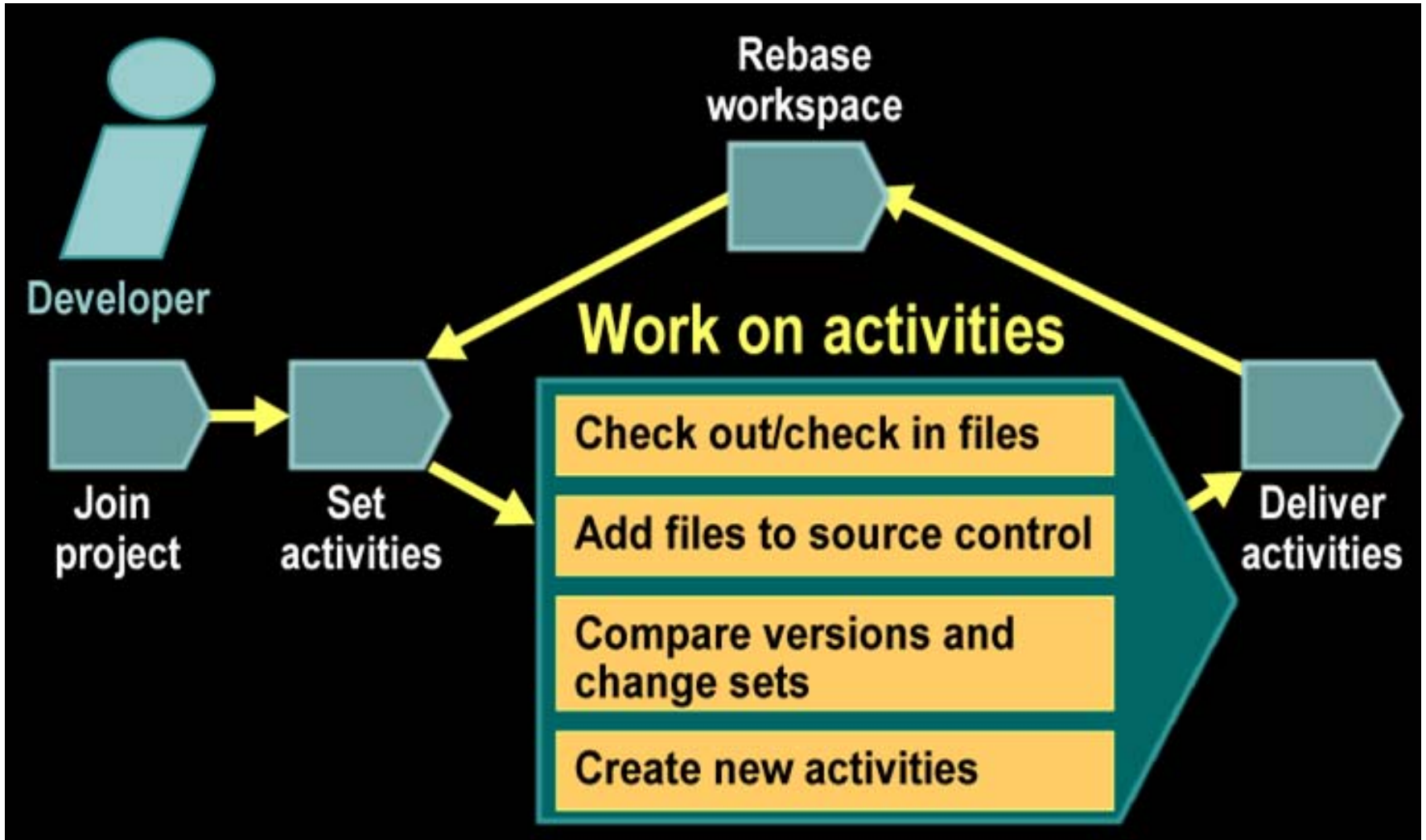
1

In ClearCase Explorer, click **My Activities** to find activities assigned to you

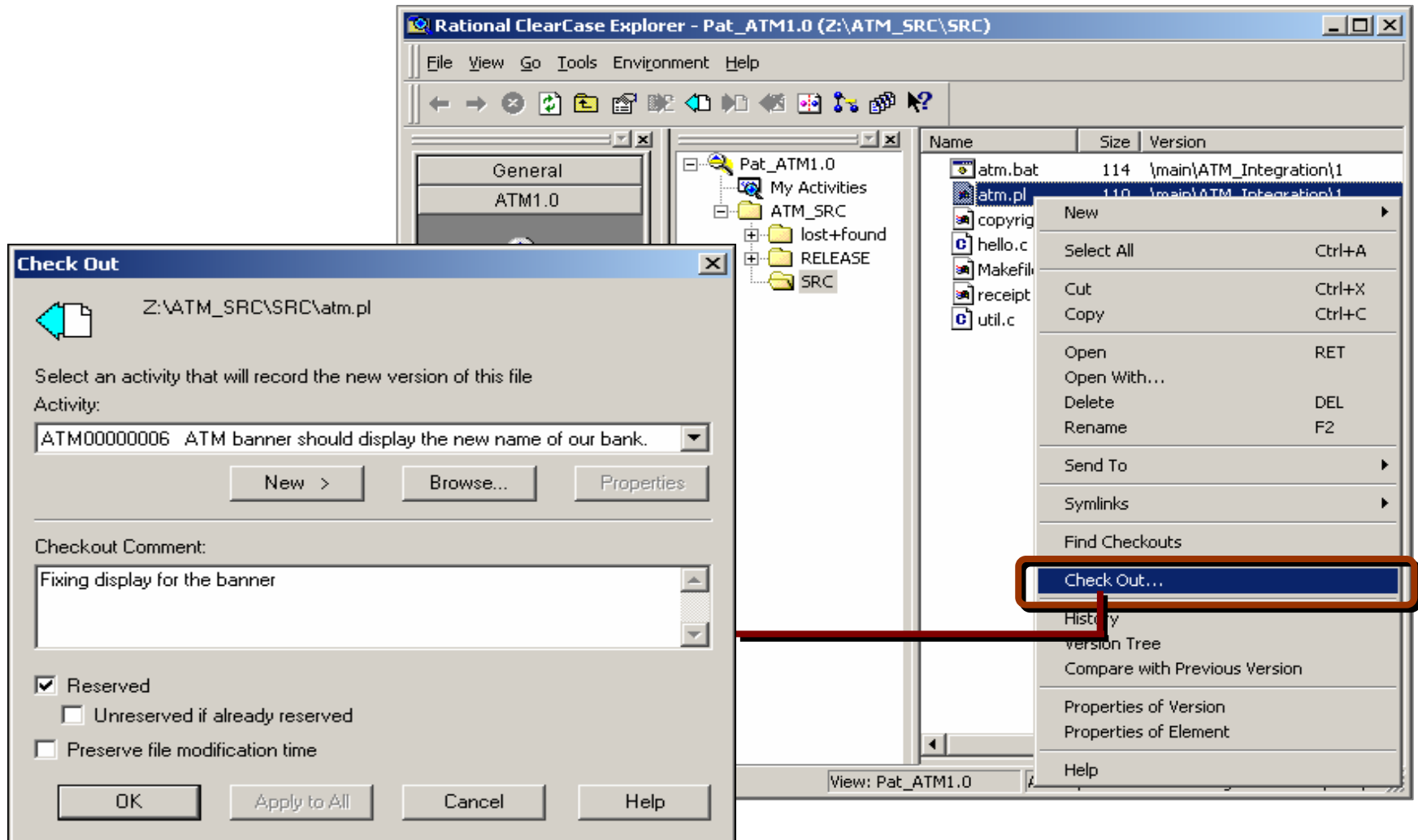
2

To set an activity to your view, select the check box next to the activity you want to work on

设计部门开发

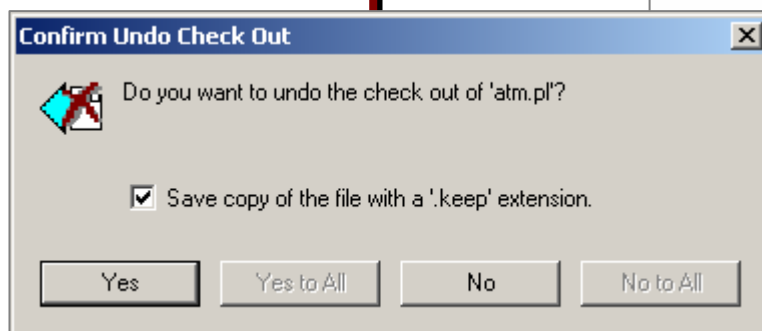
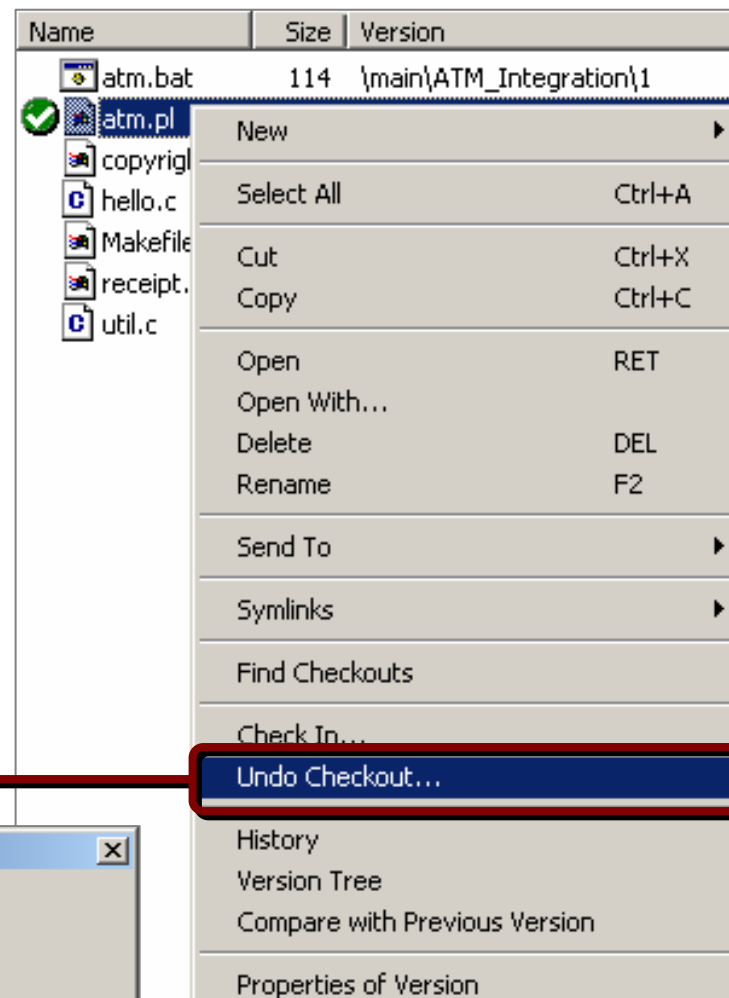


设计部门开发

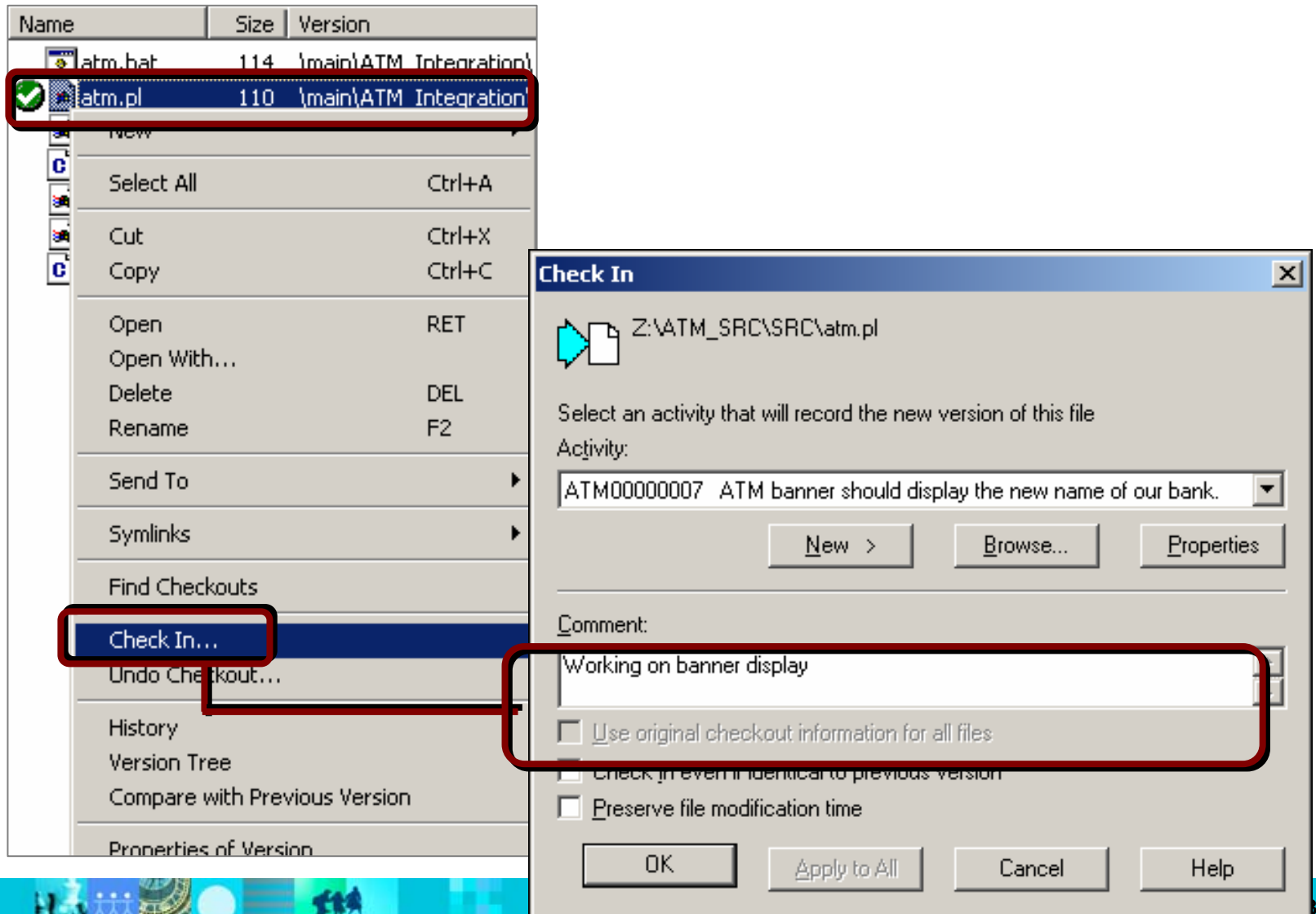


设计部门开发

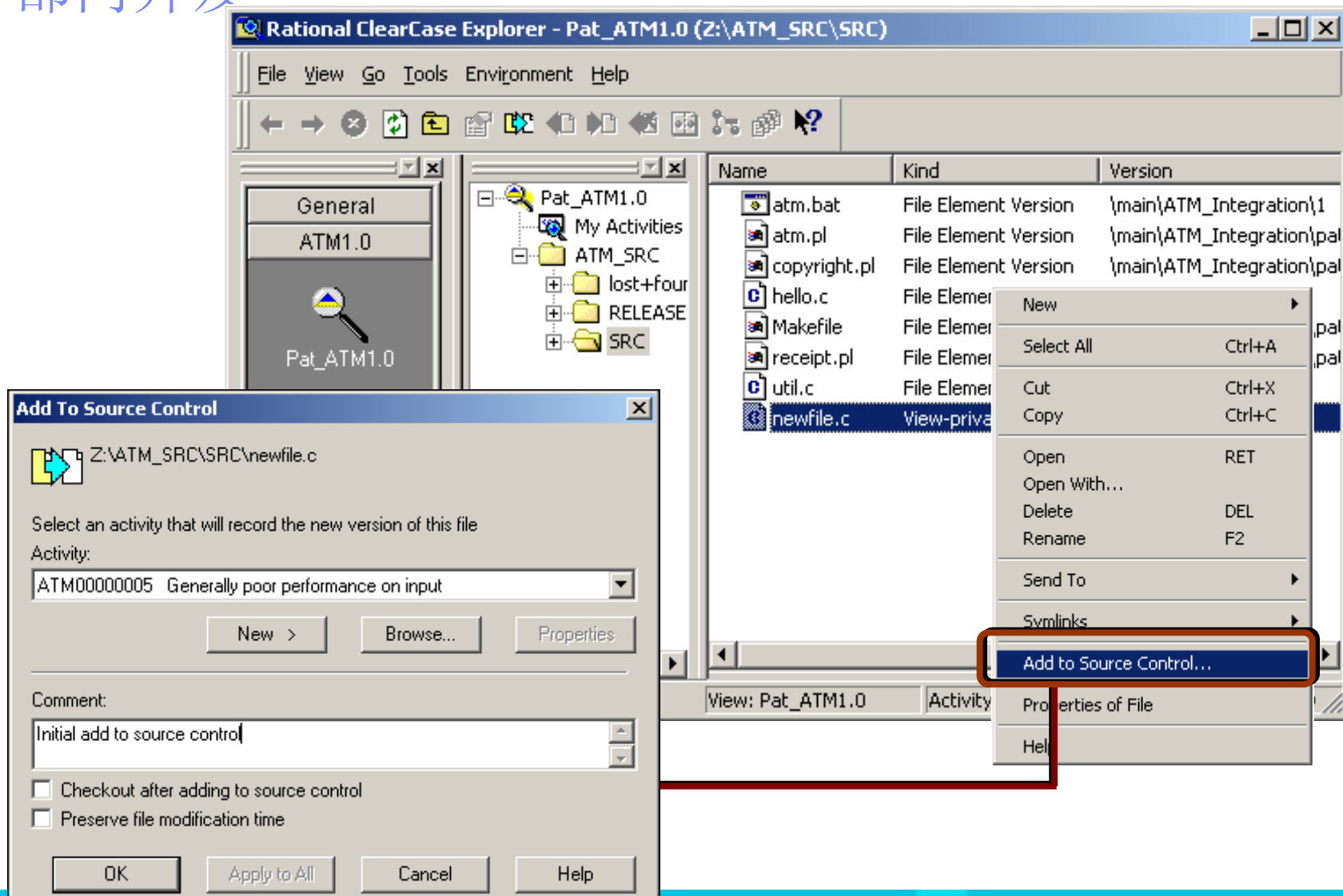
- Undo a checkout when you
 - ▶ Don't want to save changes
 - ▶ Want a fresh copy of a file
- Once a checkout is canceled, the view selects the previously checked-in version



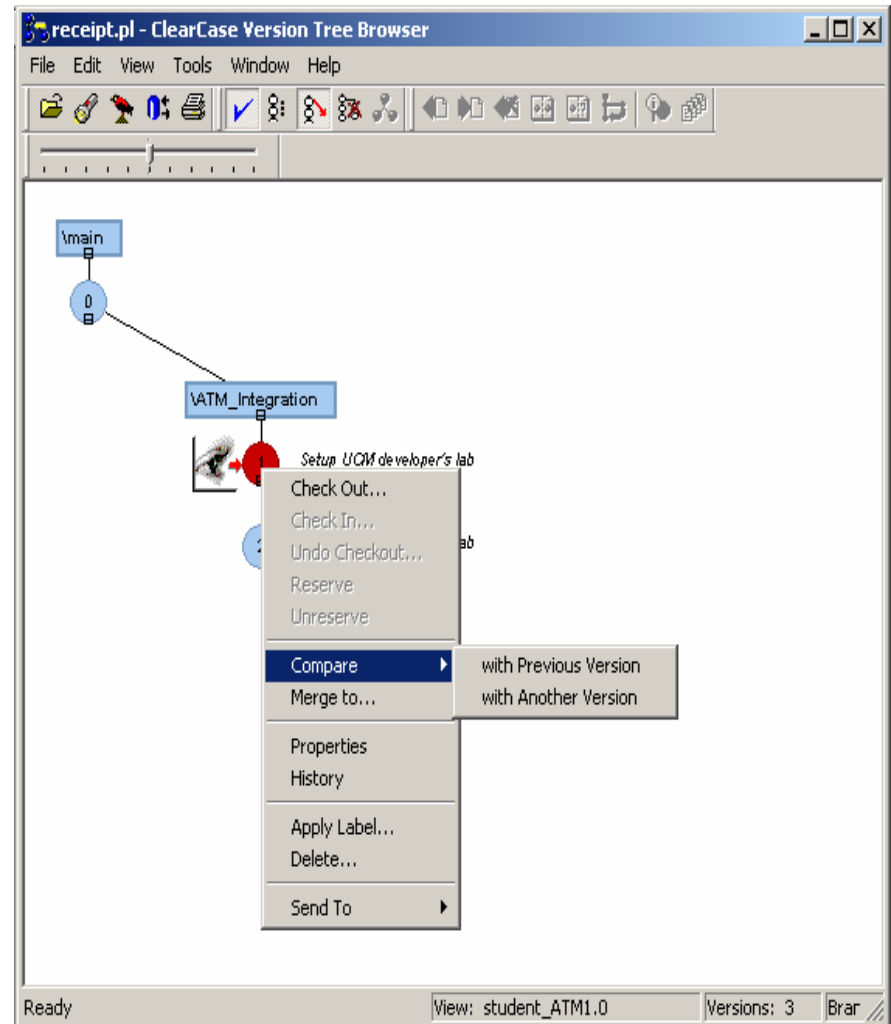
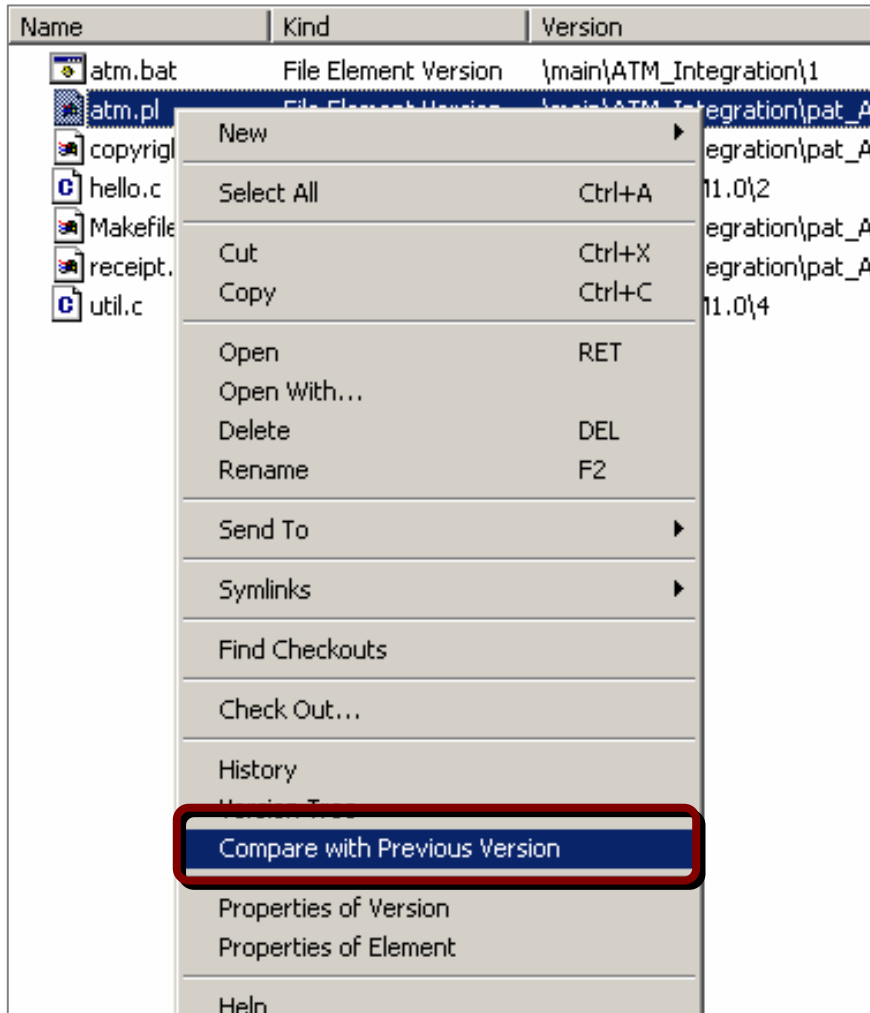
设计部门开发



设计部门开发



设计部门开发



设计部门开发

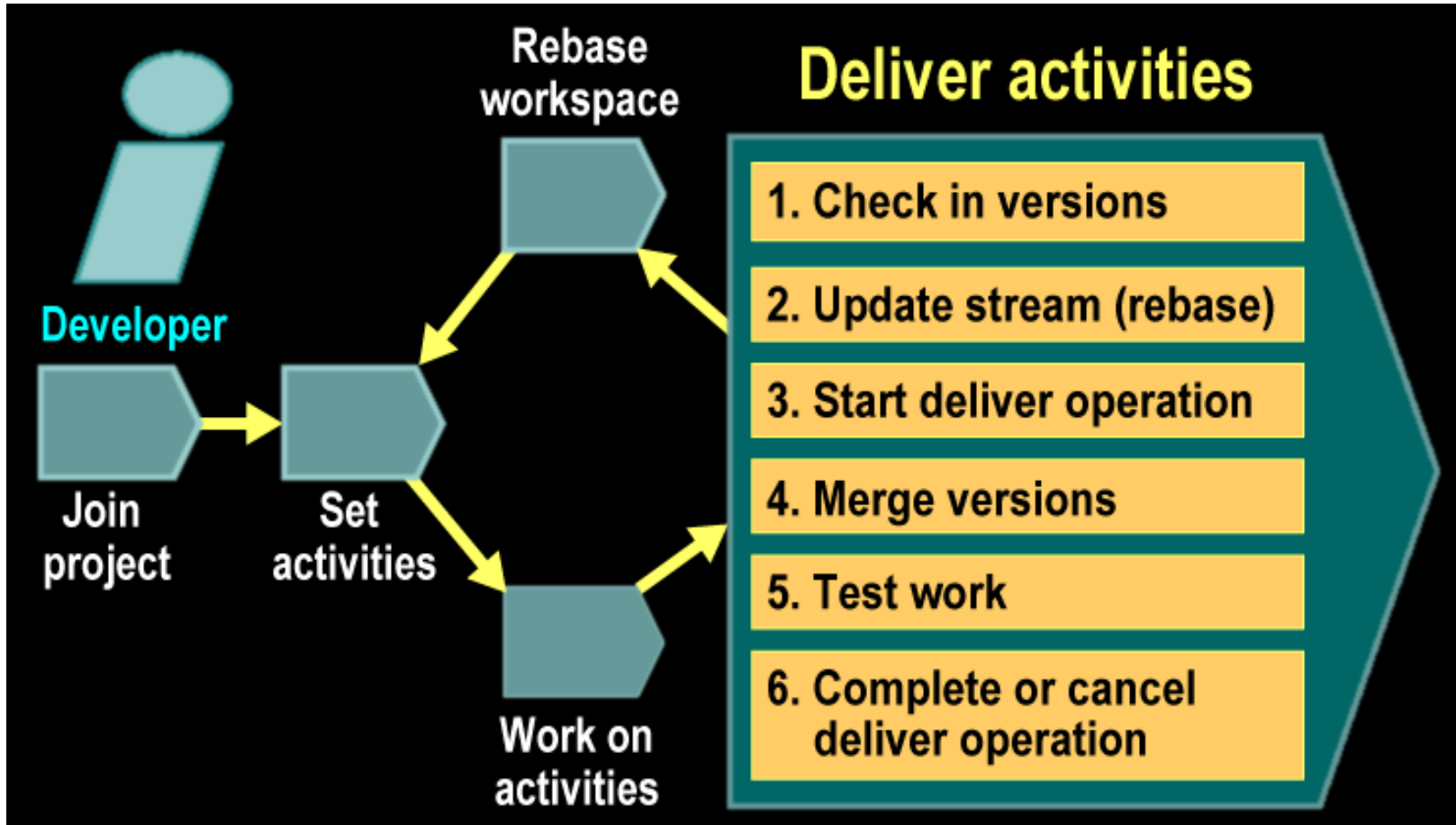
```
Comparing Z:\ATM_SRC\SRC\atm.pl@@\main\ATM_Integration\pat_ATM1.0\5 ... - Diff Merge
File Edit View Navigate Tools Help

[1] Z:\ATM_SRC\SRC\atm.pl@@\main\ATM_Integration\pat_ATM1
✓ print "Thank you for again choosing BigBank\n";
.....
print "please come back soon";
✓ print "adding these lines here";
print "Please Press ENTER if you would like to cor
$x = <STDIN>;
✓
└ #comment

[2] Z:\ATM_SRC\SRC\atm.pl@@\main\ATM_Integration\pat_ATM
▲ print "welcome to BigBank\n";
└ print "Thank you for choosing BigBank\n";
print "please come back soon";
✗
print "Please Press ENTER if you would like to cc
$x = <STDIN>;
✗
└

Ready 3 Differences Line 9 of 9 NUM
```


设计部门开发



设计部门开发

1
Click **Deliver from Stream**

2
Select the activities you want to deliver

Activities in the 'pat_ATM1.0' Stream with undelivered work:

- Text is hard to read against dark background
- ATM banner should display the new name of our bank.
- Fixing the typo in the copywrite
- Generally poor performance on input
- Incorrect working on the PIN prompt

Merge elements graphically.

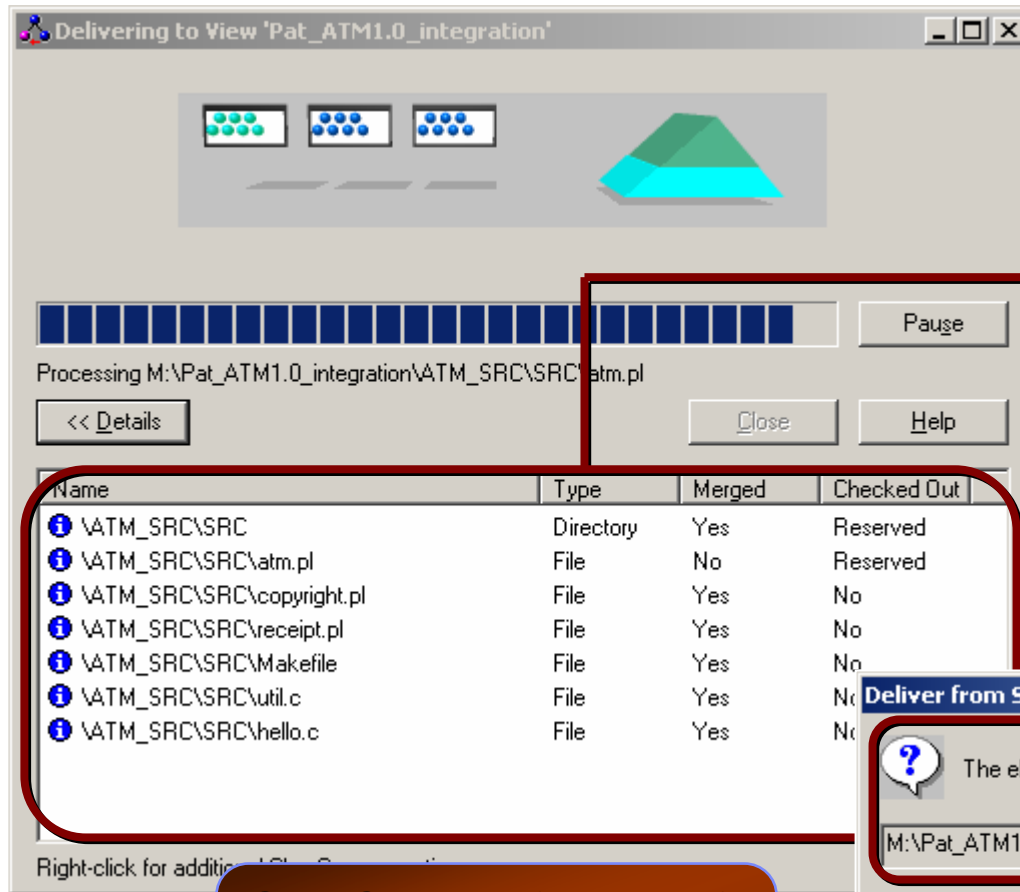
Delivering to:

Project: ATM1.0
Stream: ATM_Integration
View: Pat_ATM1.0_integration

Change >>

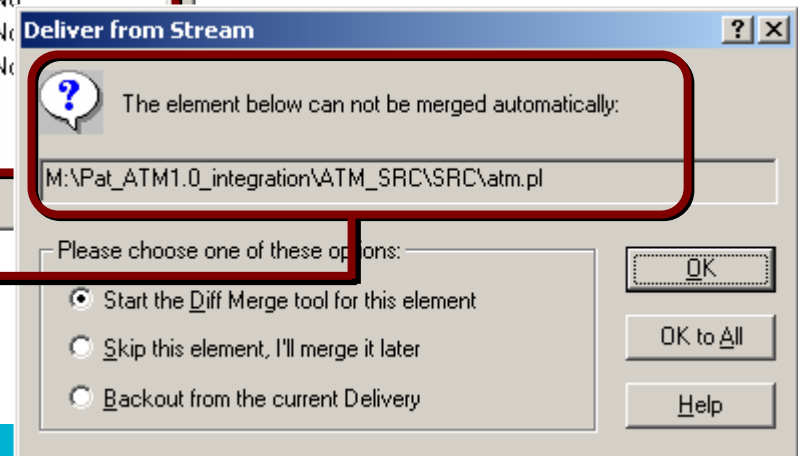
View: Pat_ATM1.0 | Activity: ATM banner should display the new name of our bar

设计部门开发



ClearCase finds the elements associated with the selected activities

ClearCase notifies you of elements that cannot be automatically merged



设计部门开发

atm.pl.merge - Diff Merge

File Edit View Navigate Tools Help

M:\Pat_ATM1.0_integration\ATM_SRC\SRC\atm.pl.merge *

```

print "Welcome to BigBank\n";
print "Thank you for choosing BigBank\n";
print "please come back soon";
print "Please Press ENTER if you would like to continue.";
<<< merge needed >>>
<<< difference resolved - line(s) deleted >>>
$x = <STDIN>;
  
```

Merge results pane
This is the result of the merge

[1:Base] M:\Pat_ATM1.0_integration\ATM_SRC\SRC\atm.pl.merge

```

require "copyright.pl";

print "Welcome to SmallBakn\n";
print "Press ENTER to continue...";
$x = <STDIN>;
  
```

Base contributor
The original version

[2] M:\Pat_ATM1.0_integration\ATM_SRC\SRC\atm.pl.merge

```

print "Welcome to BigBank\n";
print "Thank you for choosing BigBank";
print "please come back soon";
print "Please Press ENTER if you woul";

$x = <STDIN>;
  
```

Contributor 1
The version in your development view that you are delivering FROM

[3:"To-version"] M:\Pat_ATM1.0_integration\ATM_SRC\SRC\atm.pl.merge

```

require "copyright.pl";

print "Welcome to SmallBank\n";
print "Press ENTER to continue...";
$x = <STDIN>;
  
```

Contributor 2
The version in the integration view that you are delivering TO (target)

Ready

设计部门开发

atm.pl.merge - Diff Merge

File Edit View Navigate Tools Help

M:\Pat_ATM1.0_integration\ATM_SRC\src\atm.pl.merge *

```

print "Welcome to BigBank\n";
print "Thank you for choosing BigBank\n";
print "please come back soon";
print "Please Press ENTER if you would like to continue.";
<<< merge needed >>>
<<< difference resolved >>>
$x = <STDIN>;

```

Red arrow
Indicates where a manual merge is needed

Navigational toolbar
Use these buttons to move to various merge points

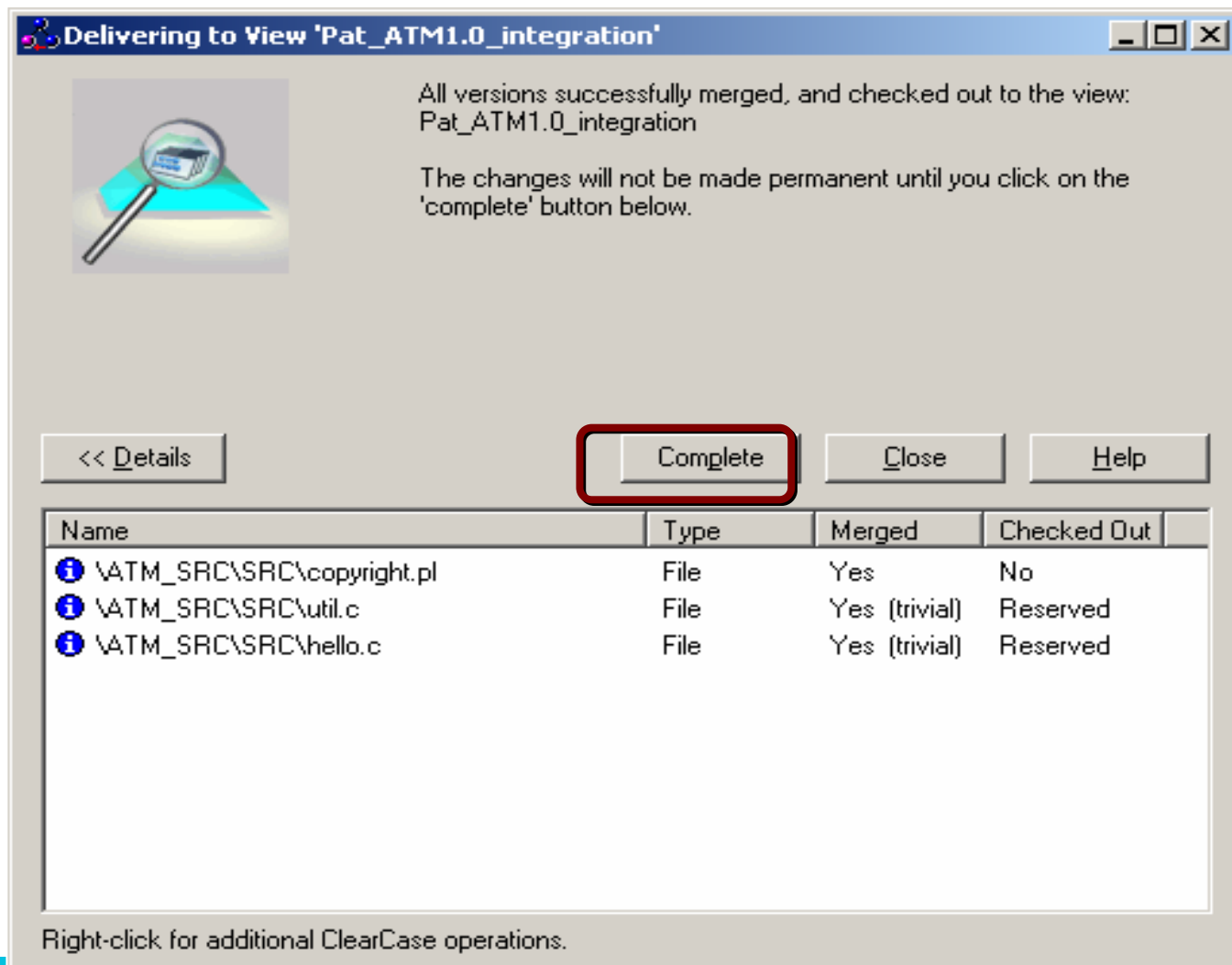
Merge buttons
Click 1, 2, or 3 to move the changes from the first, second, or third contributor pane to the merge results pane

Difference markers
Various markers that signify something was added, removed, or changed

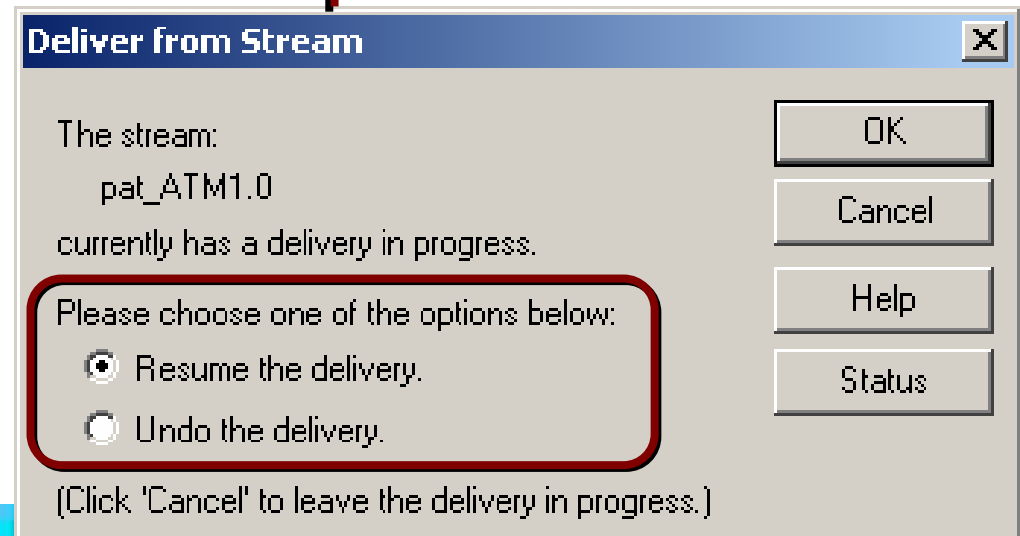
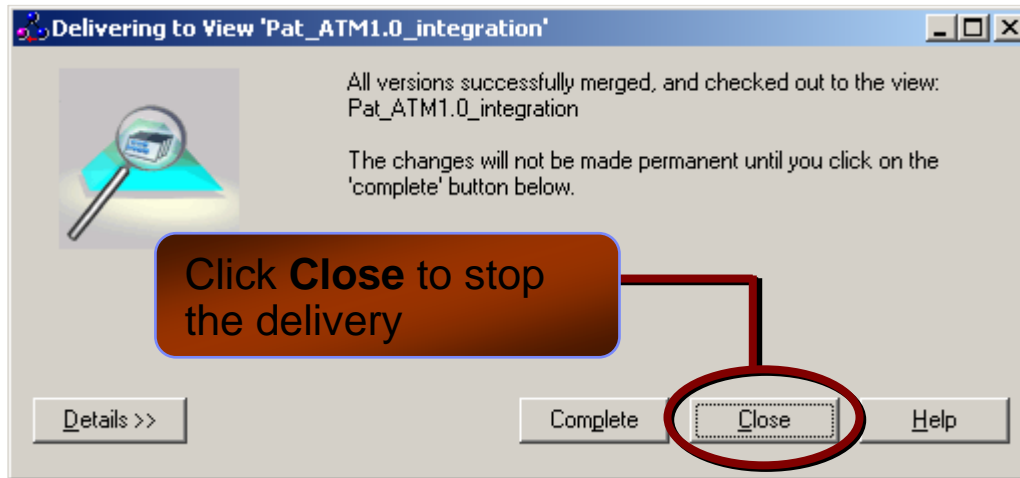
Ready

5 of 8

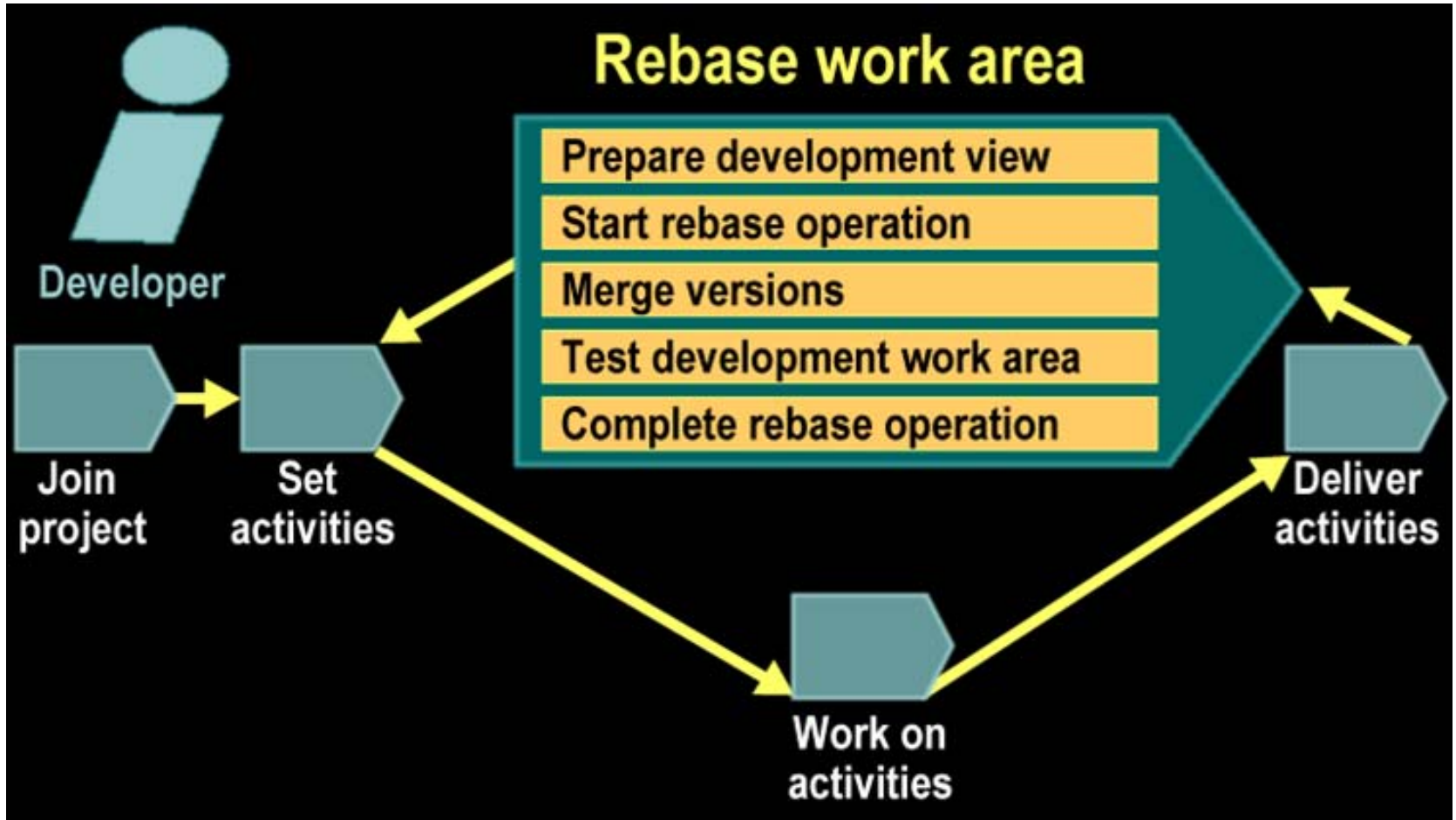
设计部门开发



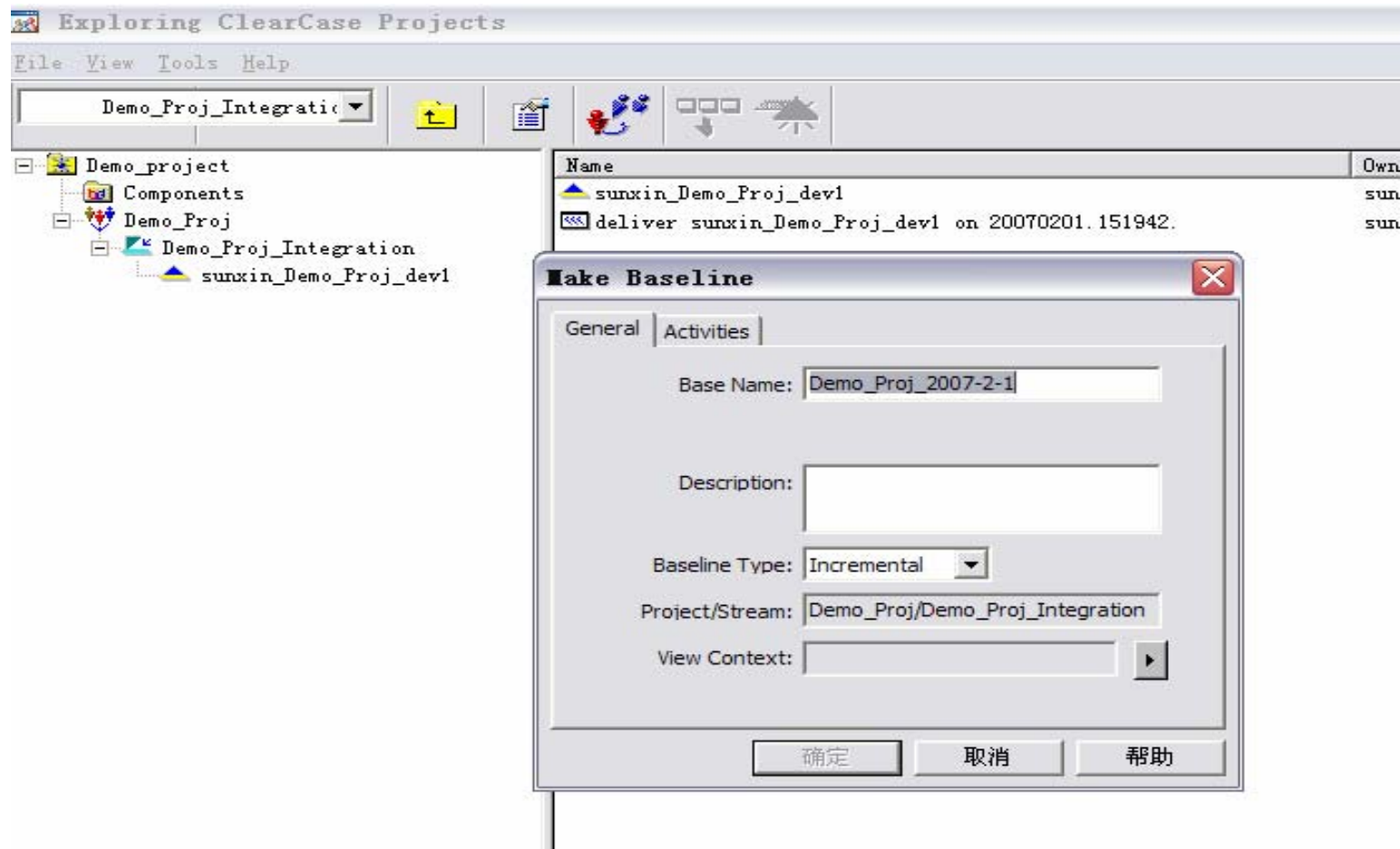
设计部门开发



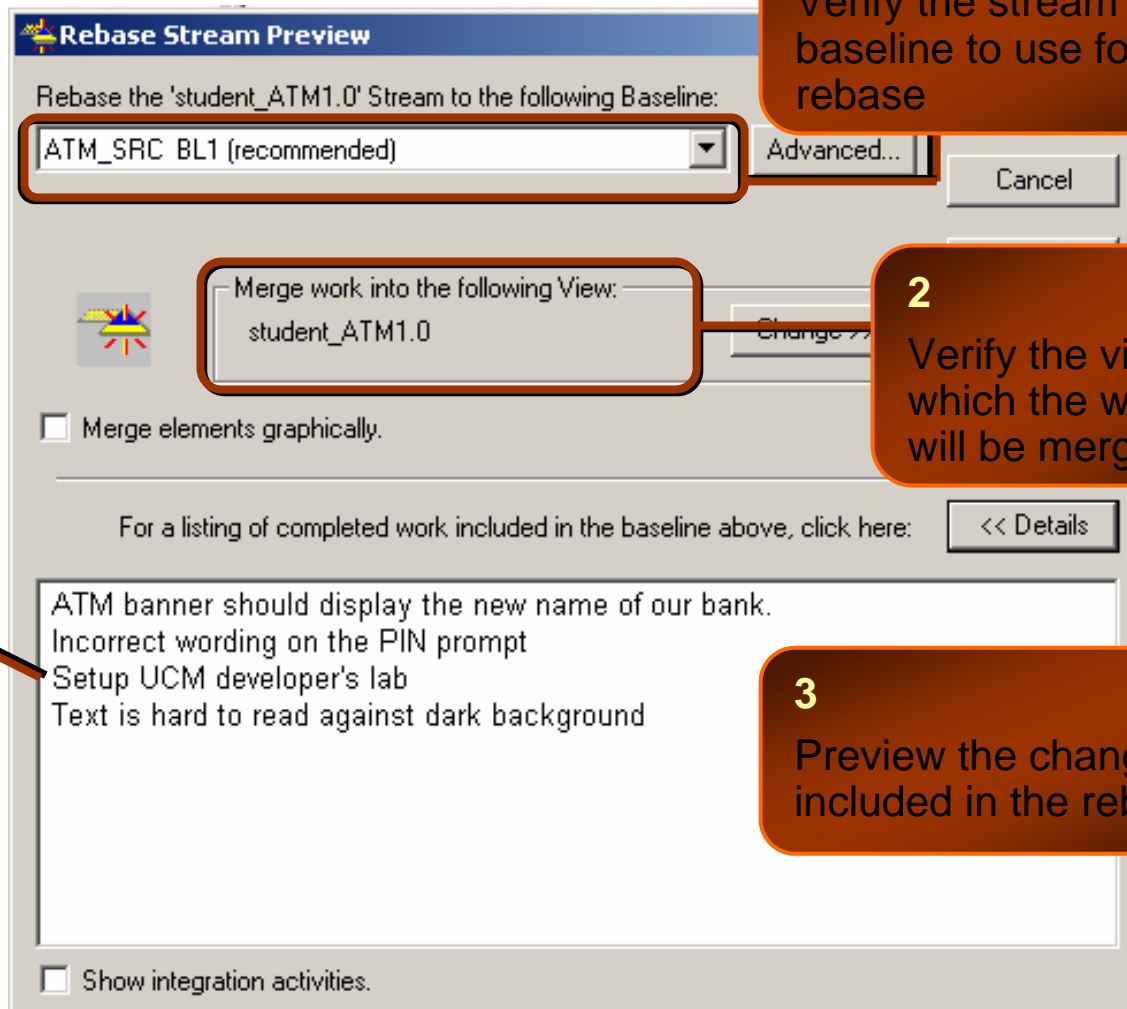
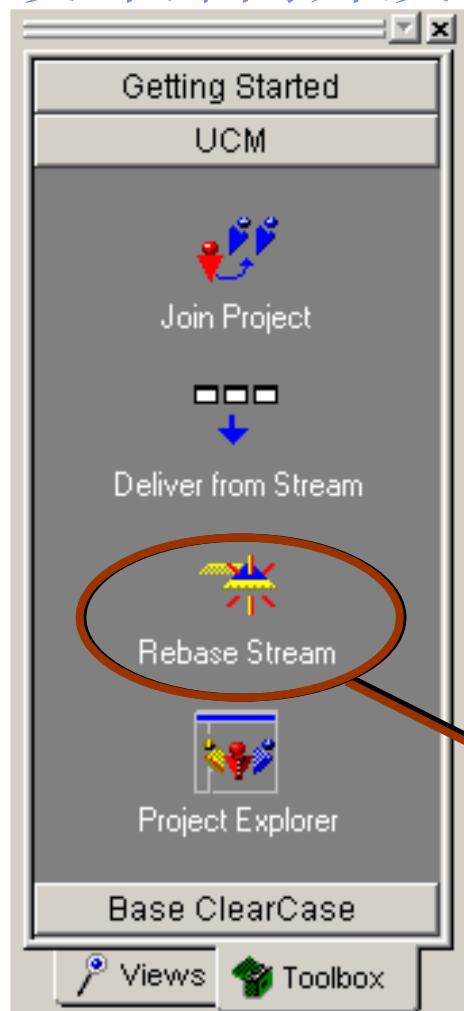
设计部门开发



设计部门开发



设计部门开发



1

Verify the stream and baseline to use for the rebase

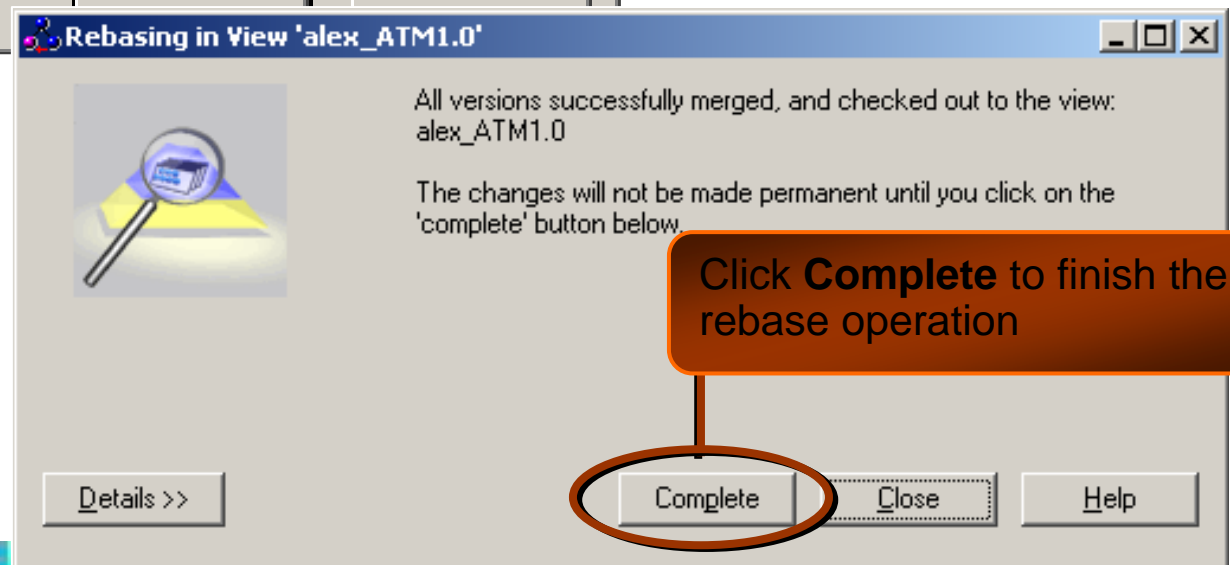
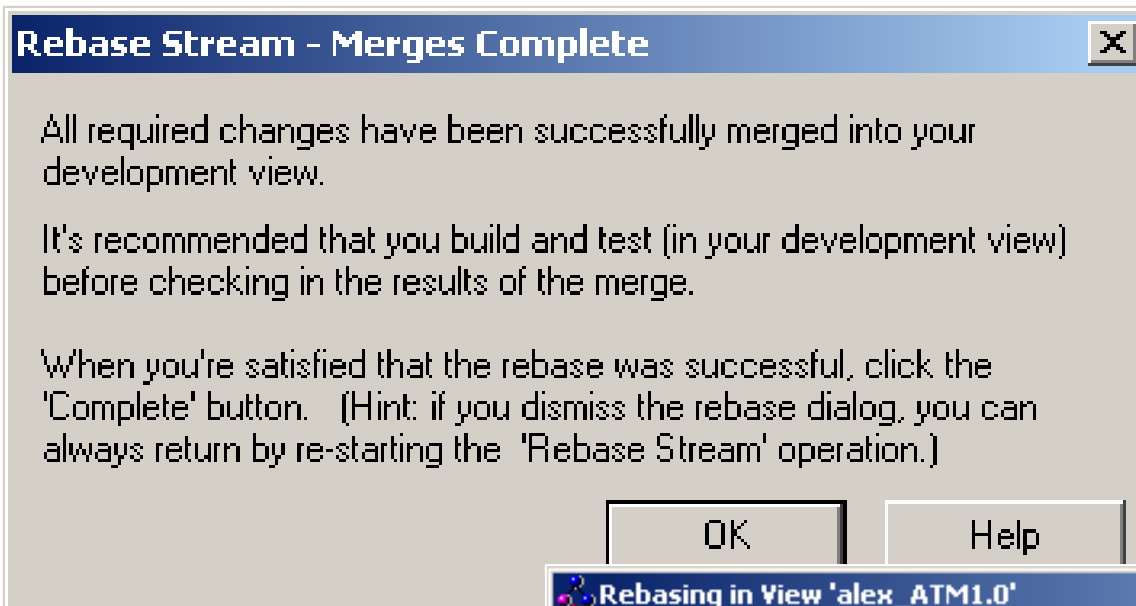
2

Verify the view to which the work will be merged

3

Preview the changes included in the rebase

设计部门开发



制造部门



提取基线

查询表单

IBM Rational ClearQuest - [MDB : (Activity)]

文件(F) 编辑(E) 视图(V) 操作(A) 查询(Q) 窗口(W) 帮助(H)

运行查询(R) 新建(N) Defect

Headline	id
新功能需求1	MDB00000012

结果集 查询编辑器 显示编辑器 /

主要项 | 统一变更管理 |

标识: MDB00000012 所有者: 市场部

状态: Active

标题: 新功能需求1

描述: 增加新功能1...

应用 还原 打印记录 操作



QUESTIONS



THANK
YOU

