Accessibility And Interoperability

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Introduction

- Most applications are written for users capable of seeing the screen, and of using both a keyboard and a mouse in normal speed.
- For a number of people, this expectation creates huge obstacles.
- Specialized assistive technologies have been written that allow these users to access the computer.
- It is difficult to convert the graphical information into something these assistive technologies can handle.
- Special interfaces for assisitive technologies allow assistive technologies to access essential information in the running applications.


Overview

- The Current Situation
  - Qt Accessibility Architecture
  - GNOME Accessibility Architecture
- Bridging Between the Two Architectures
- KDE Based Assistive Technologies

The Current Situation

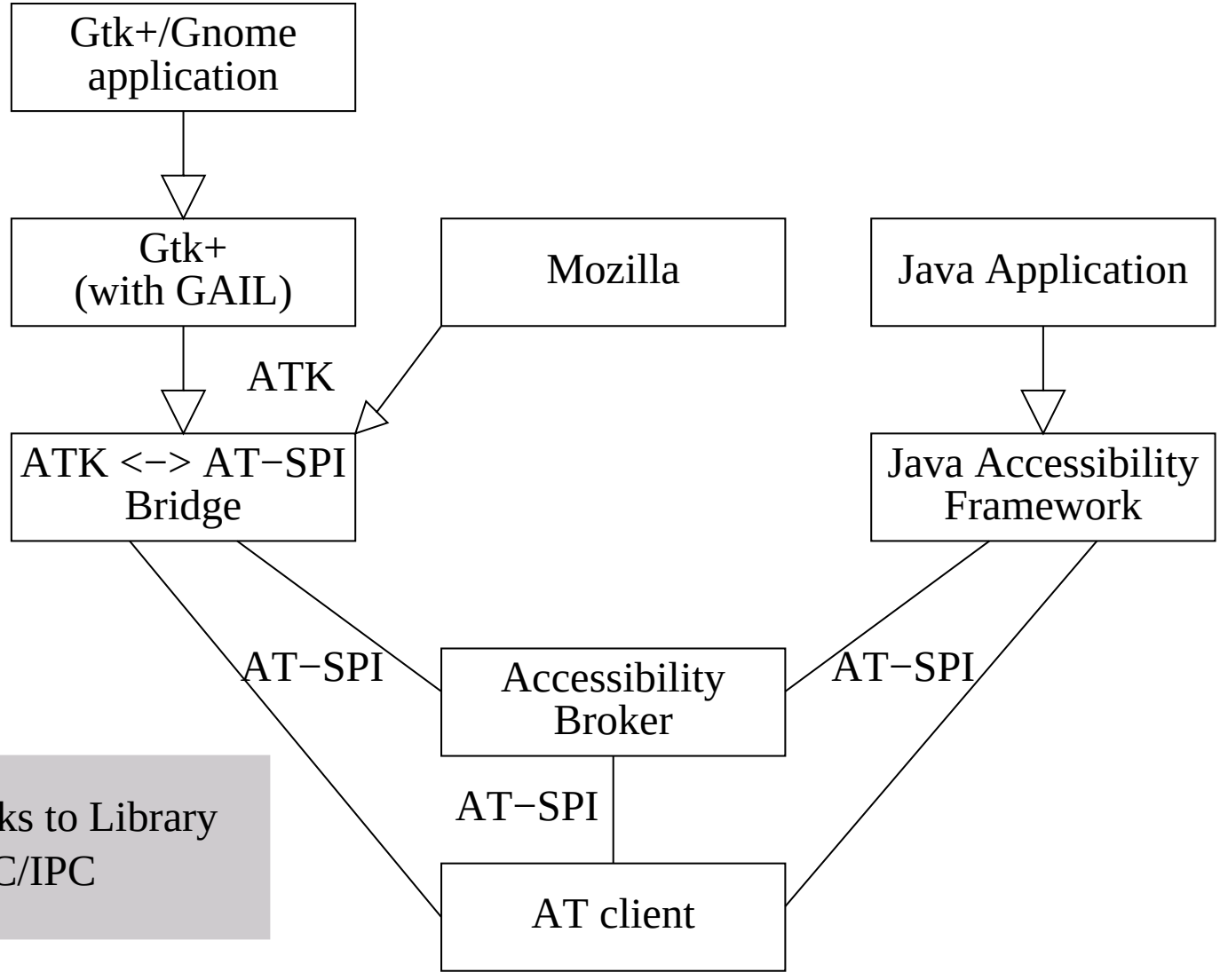

Qt Accessibility

- The Qt Accessibility Architecture was added to Qt for providing support for the Microsoft Active Accessibility (MSAA) technology on Windows.
- MSAA was not designed to be the only source of information that is used by assistive technologies.
- On Unix systems an interface for assistive technologies cannot rely on other protocols, so they have to be complete.
- Trolltech currently work on extending their accessibility architecture.


Qt Accessibility

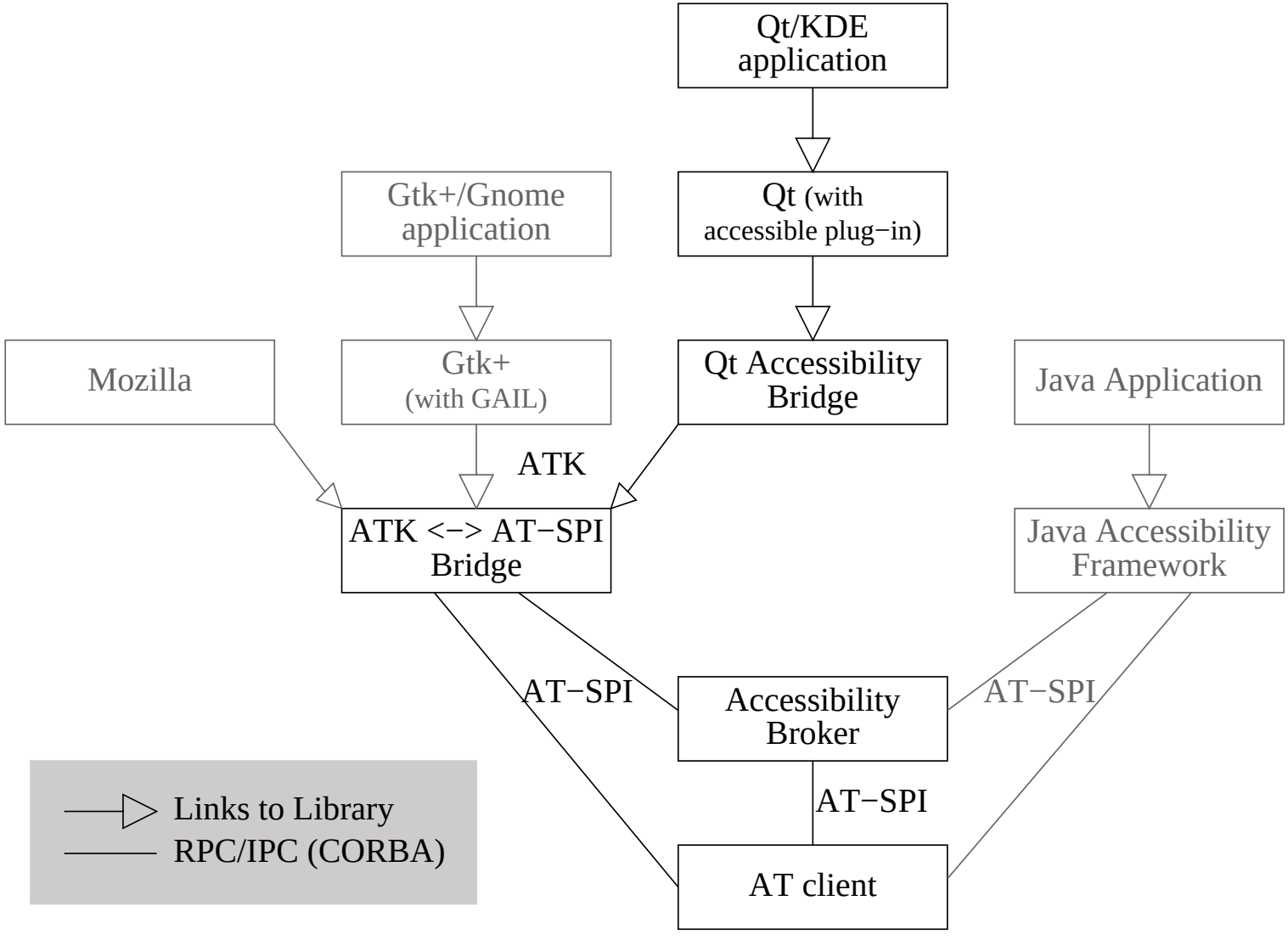
- For all widgets in the application accessibility objects are created that can be enquired by the assistive toolkits.
- Only the base classes for these objects are part of the Qt library, the actual implementation of the accessibility information is hidden in a plug-in.
- For widgets that are implemented outside of Qt it is possible to install additional plug-ins.
- When accessibility-related information changes the widgets have to call a static method in order to inform the assistive toolkits.

GNOME Accessibility

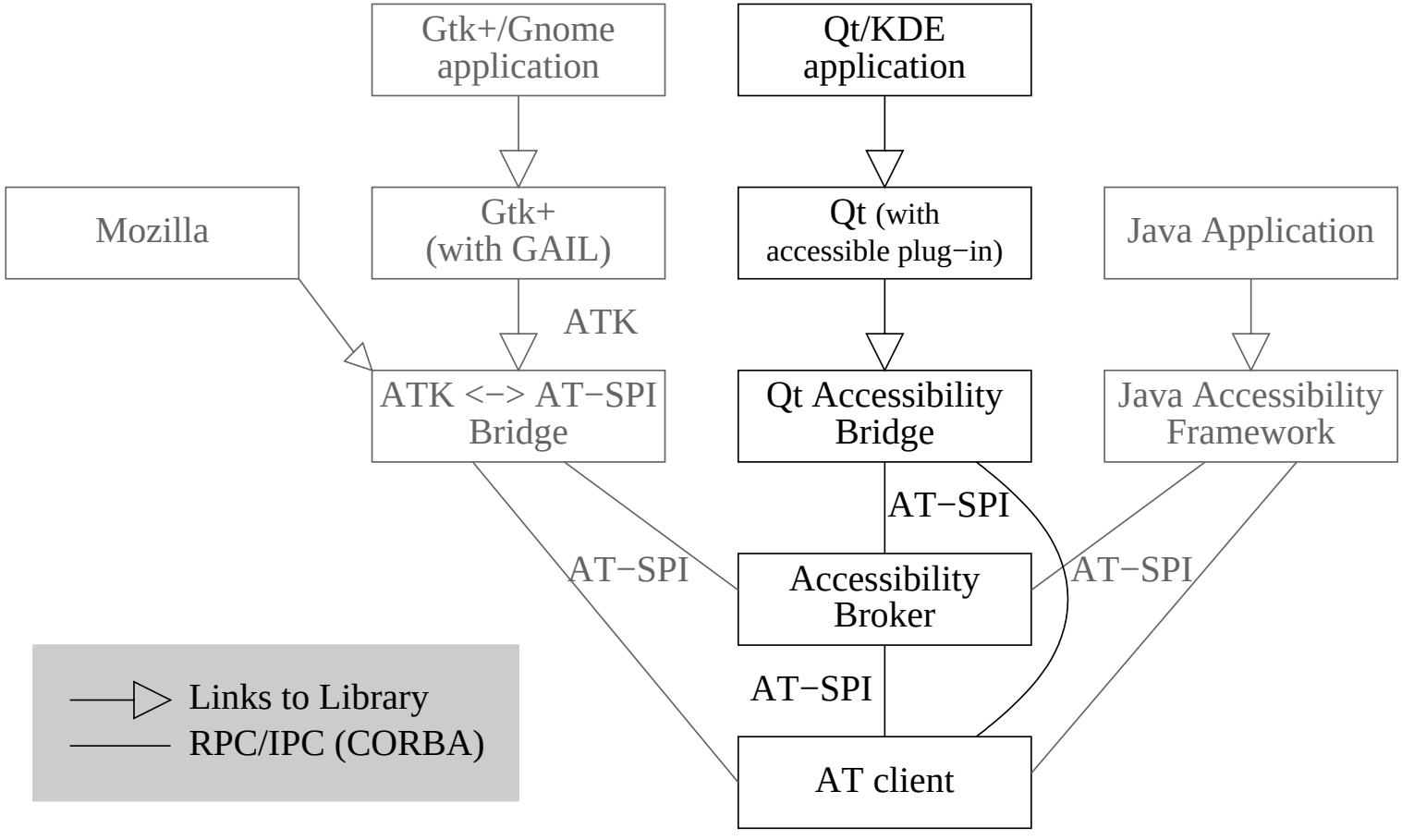


Bridging Between the Two Architectures

Bridging To ATK



Bridging To AT-SPI



KDE Based Assistive Technologies


Native APIs

- For KDE based assistive technologies, we can define an API that provides all needed functionality using Qt and KDE objects.
- We need an additional bridge between AT-SPI and this KDE/Qt based interface. If we write the interface to match AT-SPI closely, this bridge can be lightweight.
- Matching the API to AT-SPI would also leave the opportunity open to move AT-SPI onto D-BUS or DCOP if this should find the support by the GNOME Accessibility Project.

Final Remarks

- Trolltech is currently working on extending the Qt Accessibility Architecture to meet the ATK/AT-SPI requirements.
- As soon as we know what the new interfaces look like we can start to both write the bridge and the accessibility implementation plug-in for KDE.
- In the meantime it is possible to look for other accessibility issues (as for example hard coded time out values, fixed font sizes etc.).