# Higgins

**1:** A species of Tasmanian long-tailed mouse

**2:** An open source identity framework being developed at the Eclipse Foundation

# Sections

1. Higgins 1.0
   - What we released in Feb 2008
2. Higgins 1.1
   - What we're working on (or in some cases just thinking about) for June 2009
3. Beyond Higgins 1.1

# Section One: Higgins 1.0

Released February 2008

Commercial products based on Higgins 1.0 have been announced by Novell, Serena, Computer Associates and IBM

# Higgins is an Identity Framework

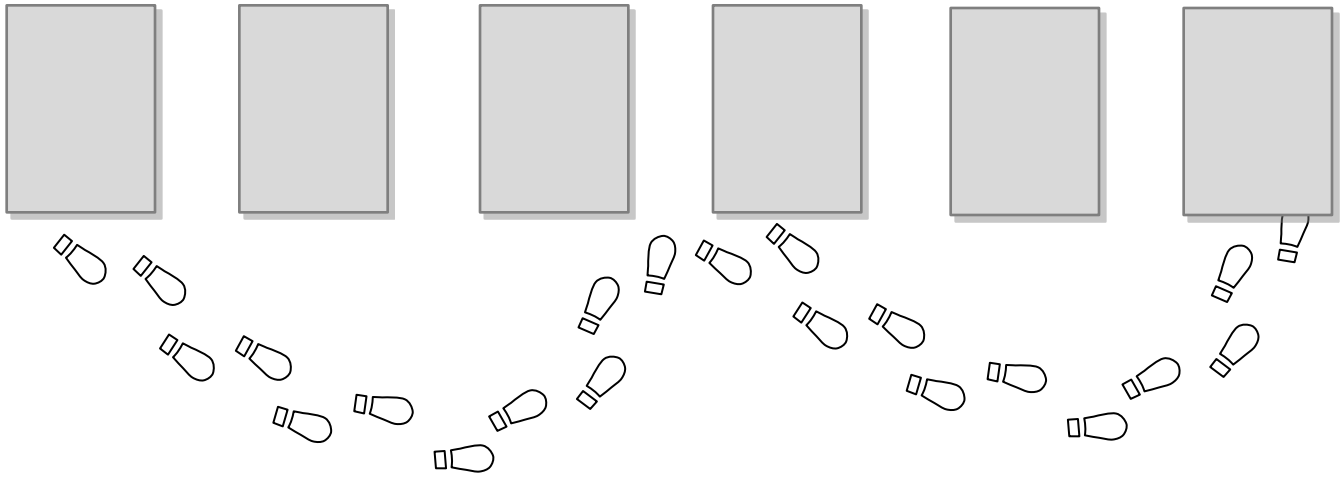
Enables users and applications to integrate identity, profile, and social relationship information across multiple data sources and protocols.

# End-users experience Higgins through the UI metaphor of Information Cards using an app called an *Identity Selector*

Information Cards and selectors are just tip of the iceberg of what can be done with Higgins, but it's a place to start…

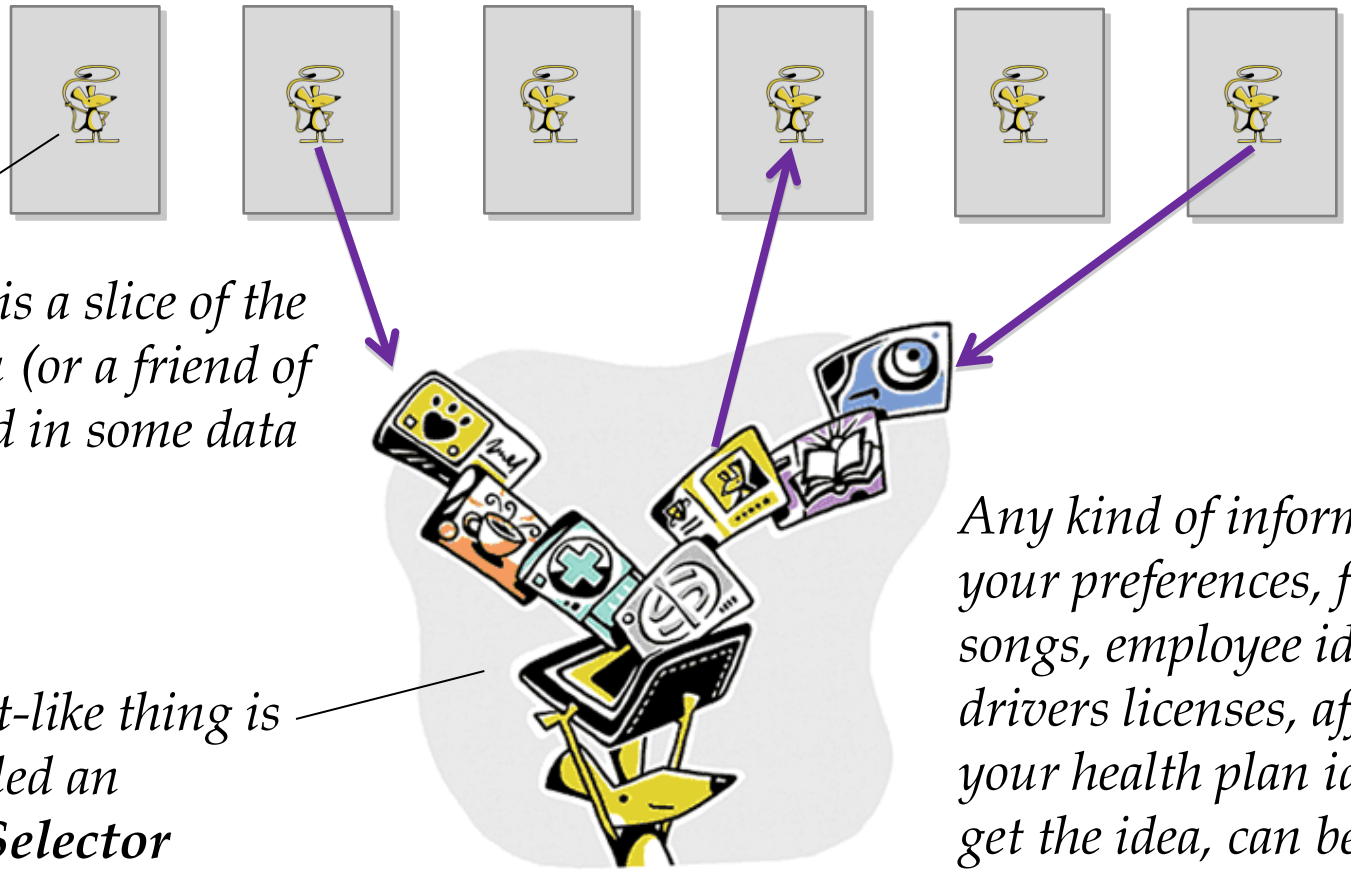
# Today you go from site to site filling in forms and passwords

Websites…



Type, type, type. Click, click.
Here a password, there a password.
Everywhere a password.
Here a form, there a form, ...

# Information Cards Put You in Control

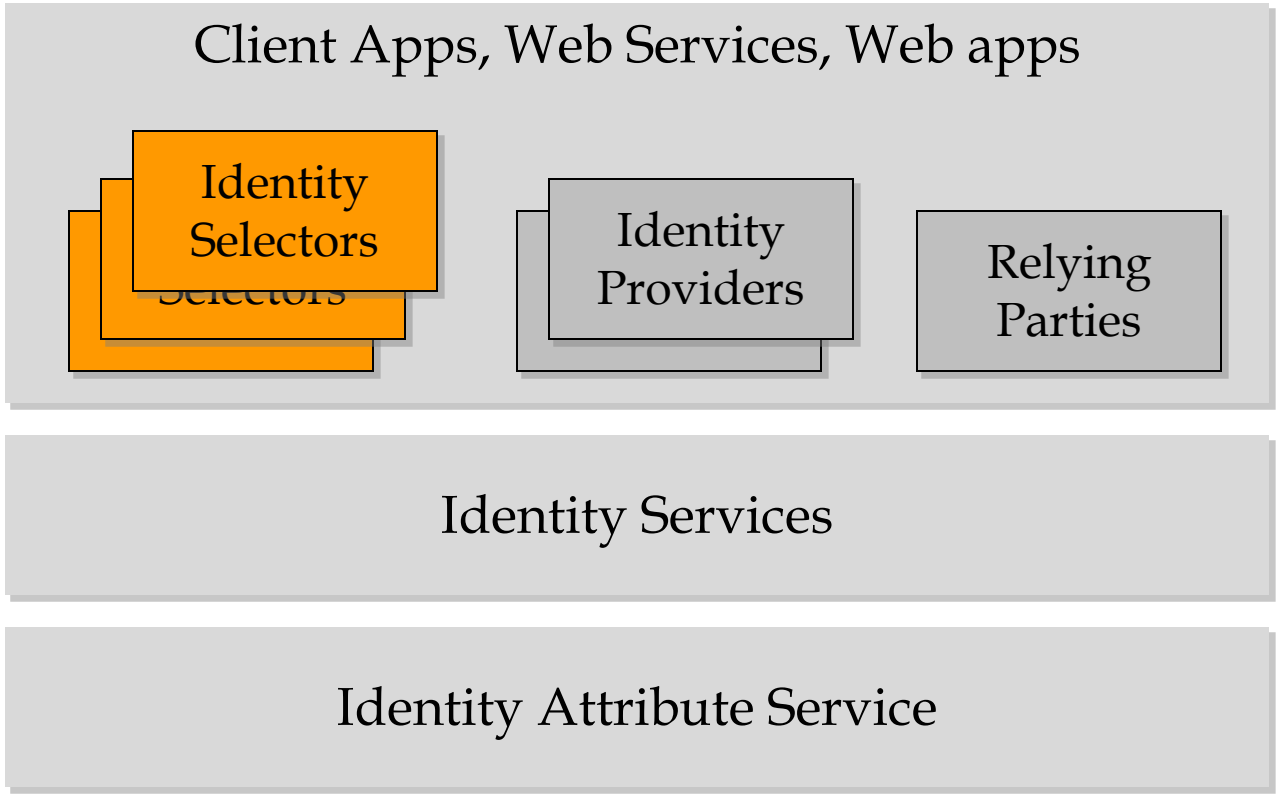


*Each card is a slice of the digital you (or a friend of yours) held in some data silo.*

*This wallet-like thing is an app called an* ***Identity Selector***

*Any kind of information: your preferences, favorite songs, employee id numbers, drivers licenses, affiliations, your health plan id, ...you get the idea, can be accessed using a card.*

# Higgins Identity Selectors

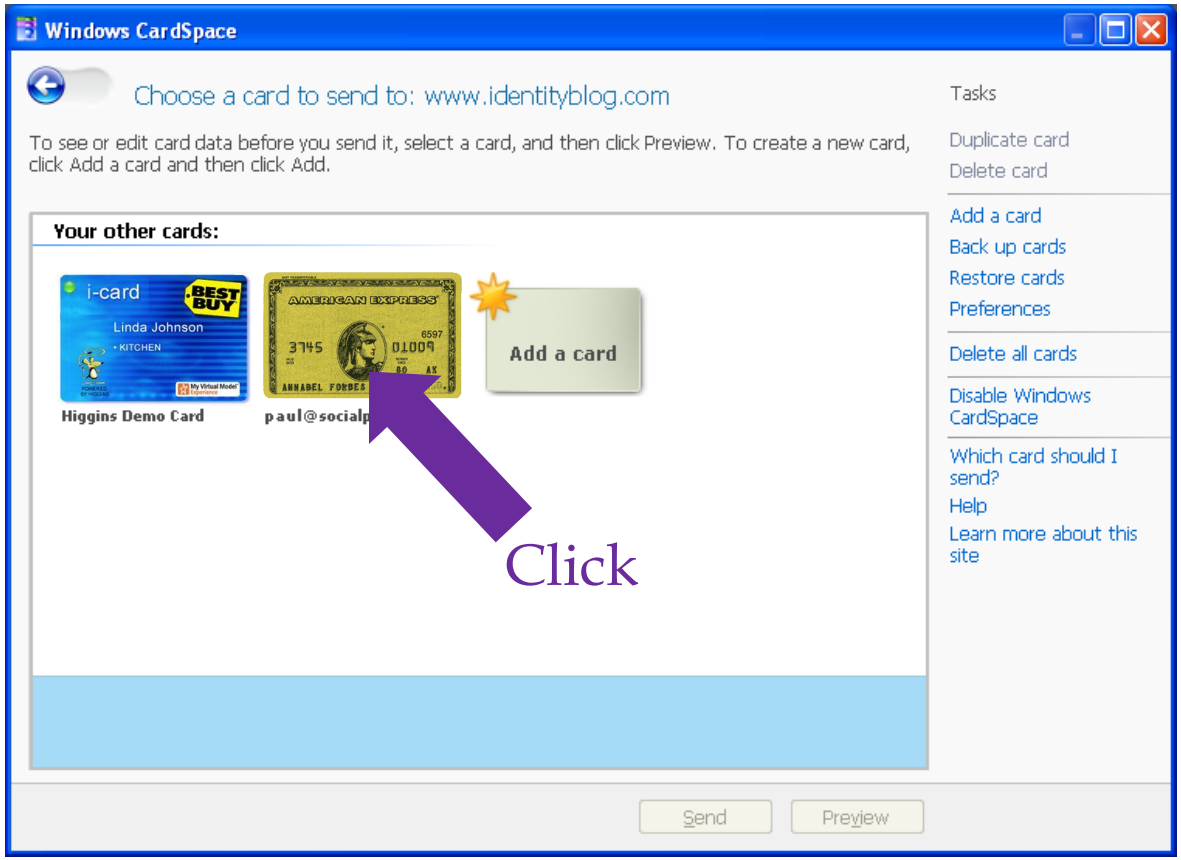


# How to Use I-Cards

- By clicking on a card you can log into sites. No more passwords
- You can share cards with friends and businesses you trust
- Some [relationship] cards create permanent connections to your friends, communities and businesses

# Identity Selector "Wallet"

## Click on a card to send it to a site




Higgins is interoperable with Microsoft CardSpace™ shown here

# Identity Selector
## Card-based Sign-in

- Per-site passwords are eliminated
- Instead, the selector posts a security token that is validated by the relying site
- Provides some anti-phishing protection

# Identity Selector
## Supported Card Types


**Managed**
What some other entity says about you


**Personal**
What you say about you

# Identity Selectors
## Three Flavors in Higgins 1.0

- Firefox-embedded Selector (Javascript)
  - For Firefox on Windows, Linux, and OSX
  - Uses hosted I-Card Service Component
- GTK / Cocoa Selector (C++)
  - For Firefox on Linux, FreeBSD, and OSX
  - Available as DigitalMe™ from Novell
- RCP Selector (Java)
  - For Eclipse RCP Application

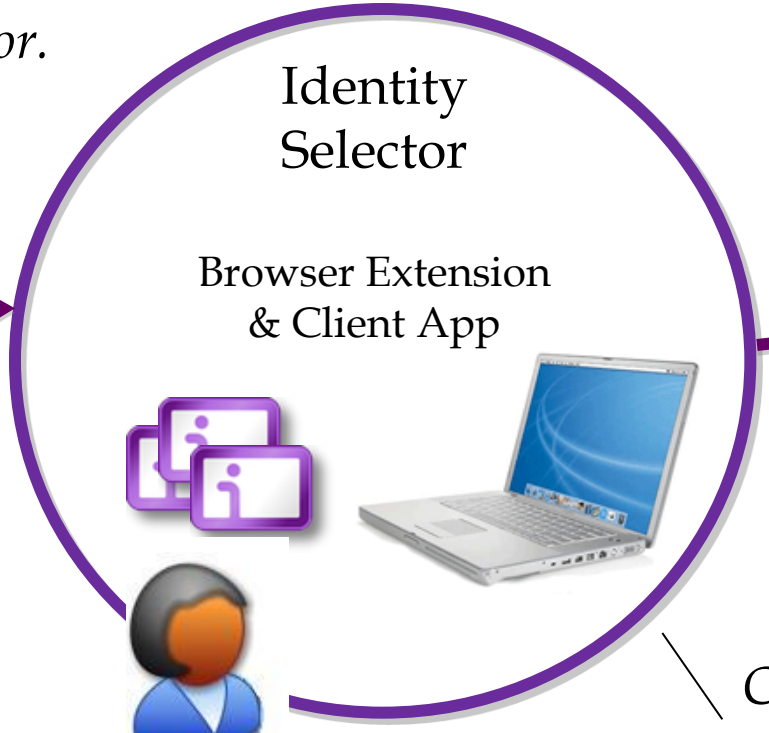
# Identity Selectors

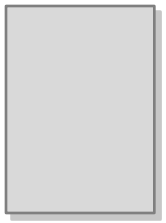
## Cards and Tokens Flow

*Cards are generated and downloaded from here. A local Token Service issues tokens as requested by Selector.*

*Tokens containing claim data is requested and received here*

Identity Provider



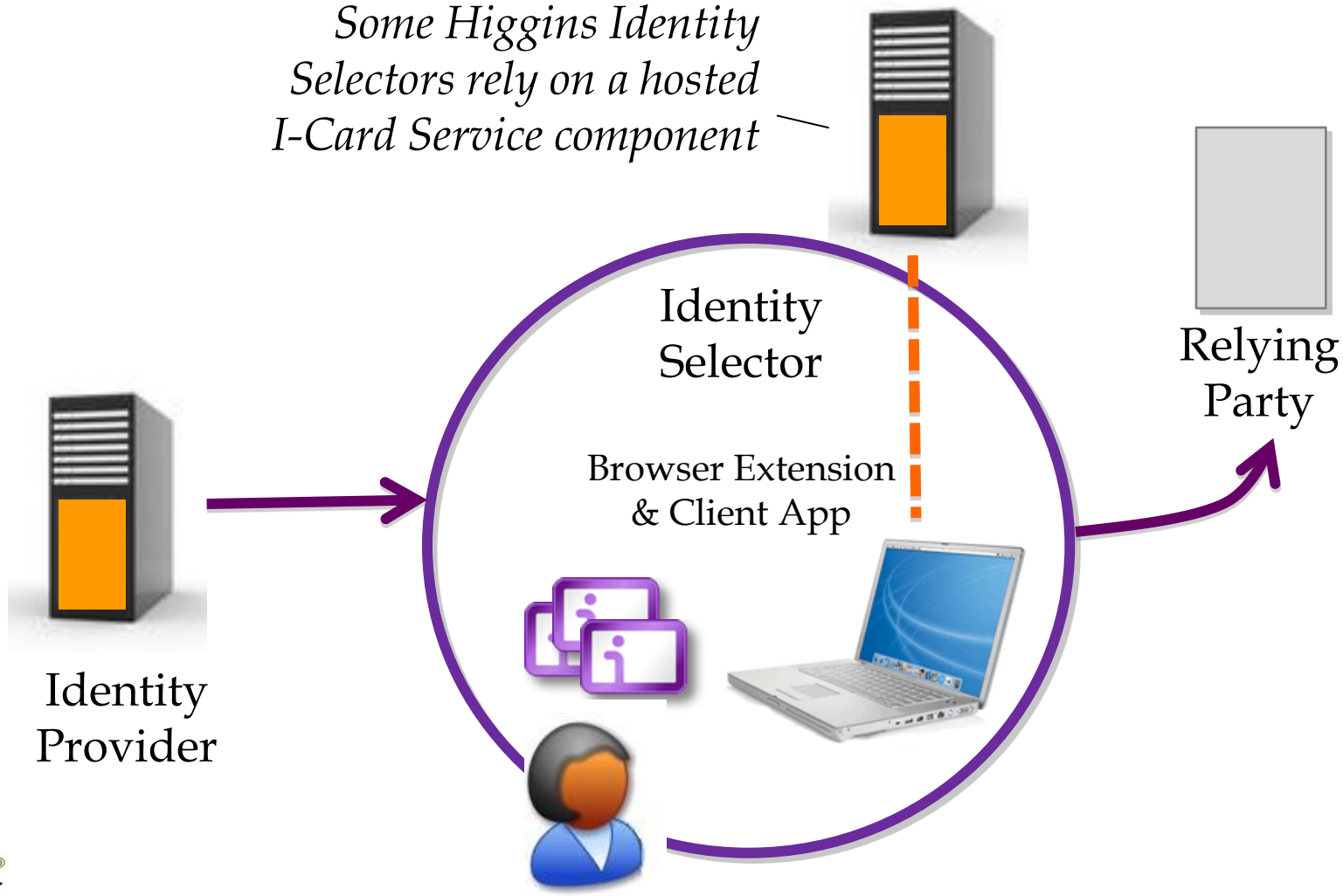



Relying Party
Website or App

*Cards are stored and selected here*

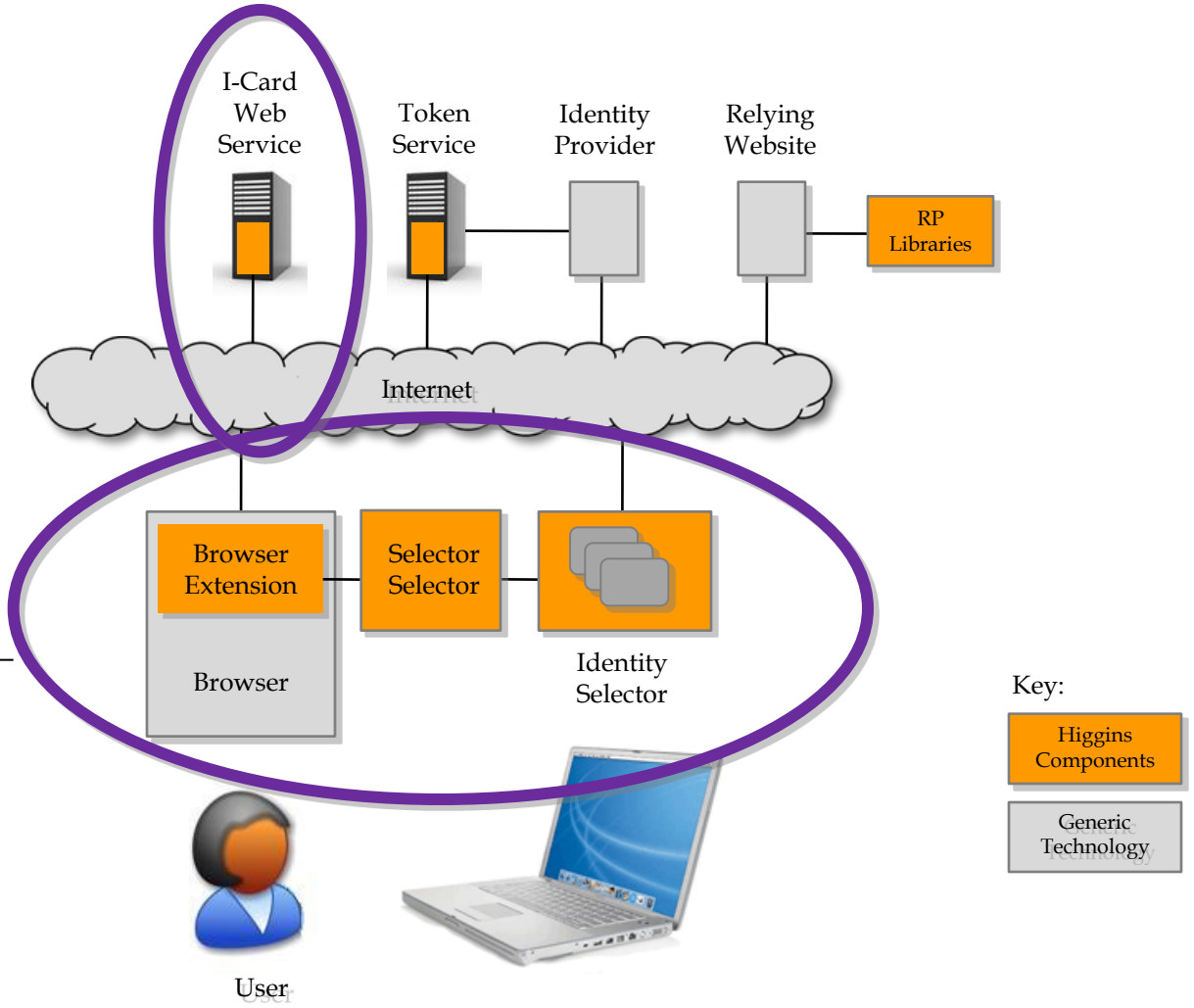
# Identity Selectors

## Cards and Tokens Flow



# Identity Selector
## Component View

*Higgins Identity Selectors. Client apps for Windows, OSX and Linux*

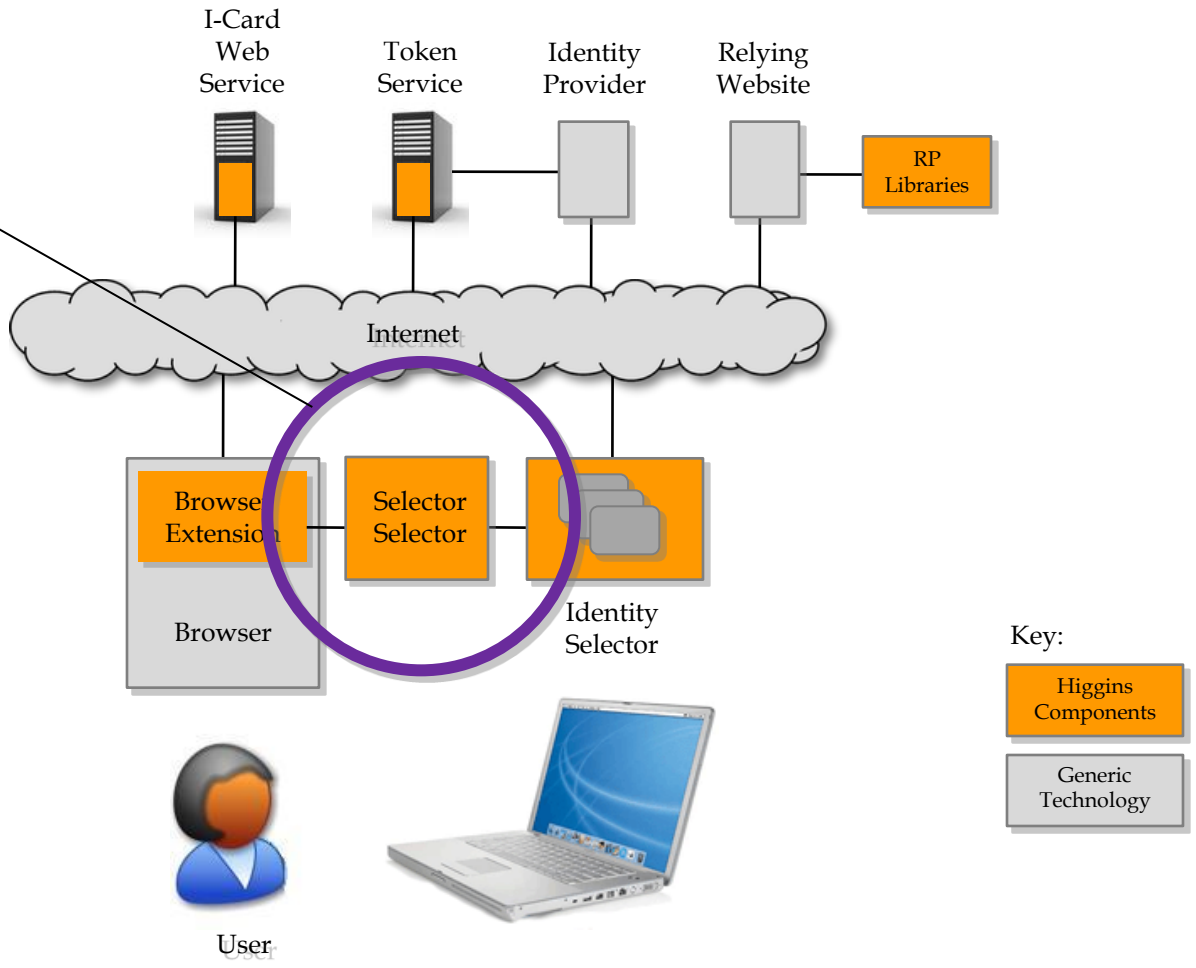


# Identity Selector

## Selector Selector – Component View

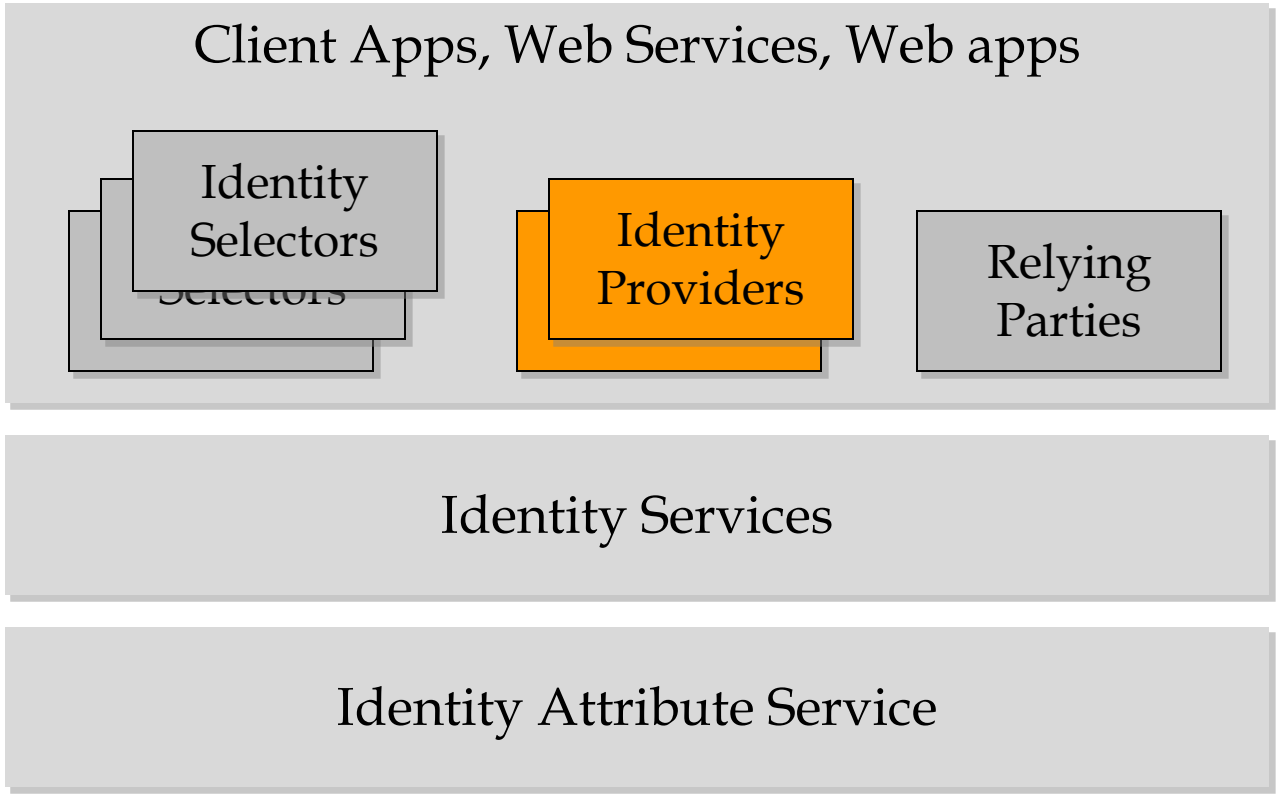
*Higgins includes a Higgins Selector Selector component (Windows-only)*

*Provides an abstraction layer that decouples browser extensions from selectors.*



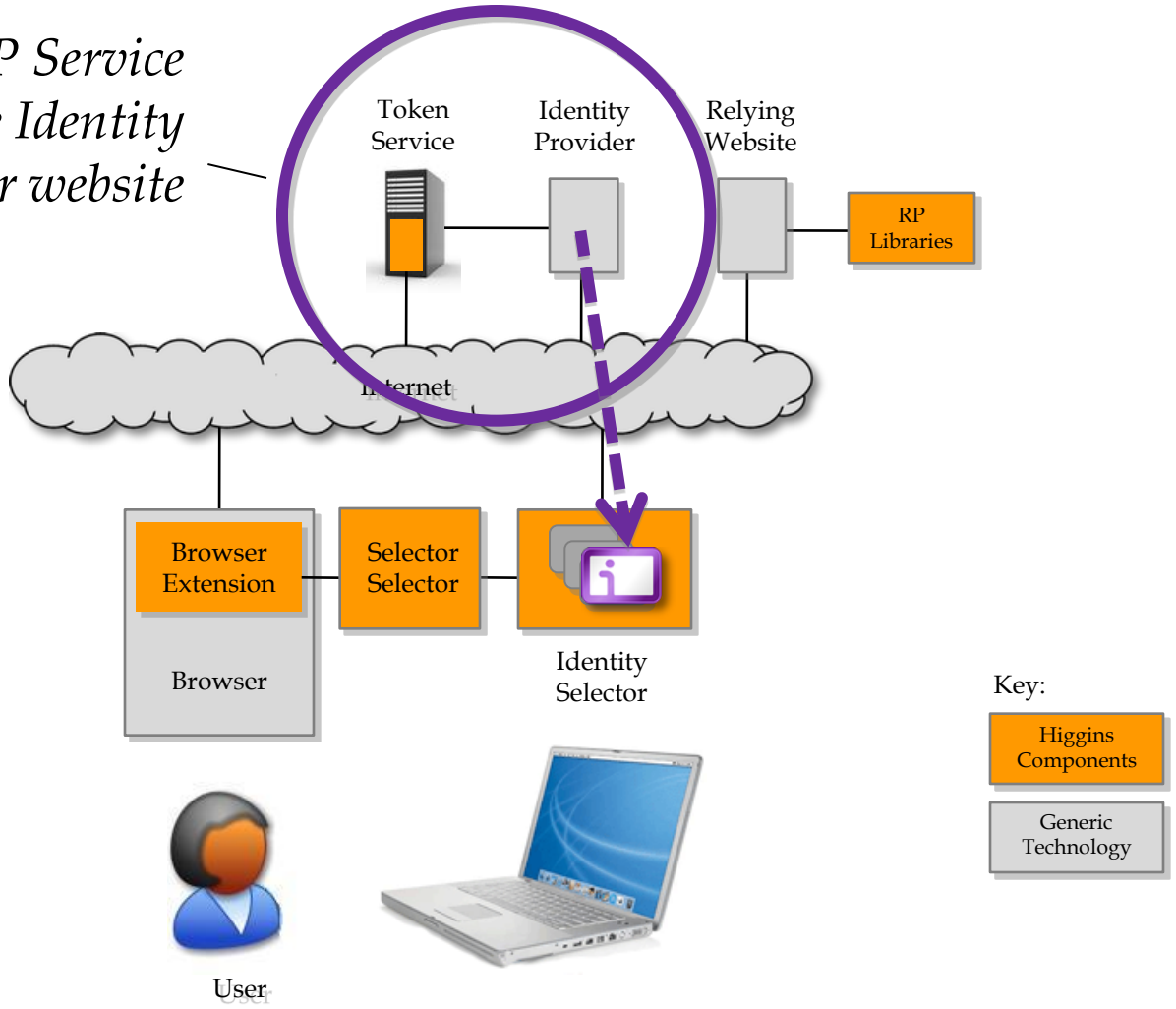
# Architecture

## Identity Providers



# Identity Providers
## Component View

*Higgins Token/IdP Service is used by the Identity Provider website*

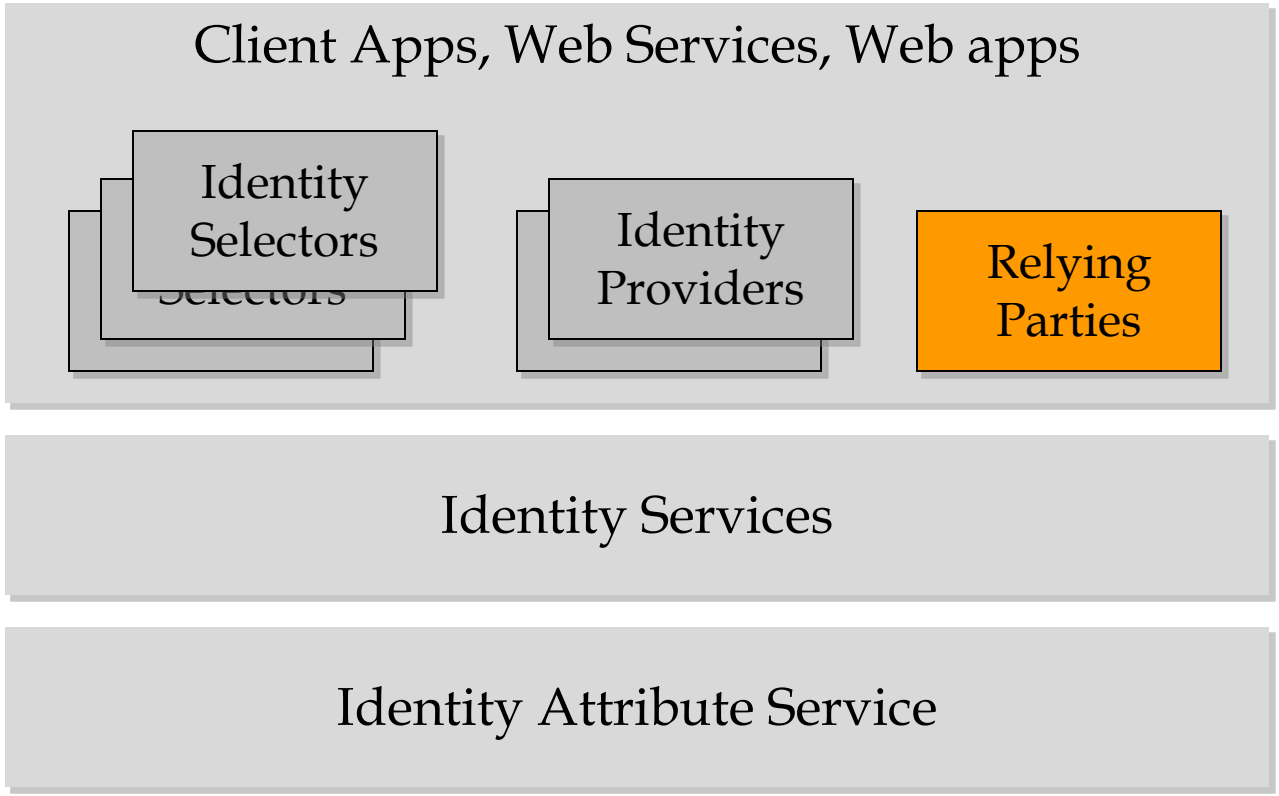


# Identity Providers
## Two Flavors

- WS-Trust Security Token Service / IdP
  - Java WS-Trust Identity Provider
  - Web service
  - Sample web site
- SAML2 IdP
  - Java SAML2 Identity Provider
  - Web service

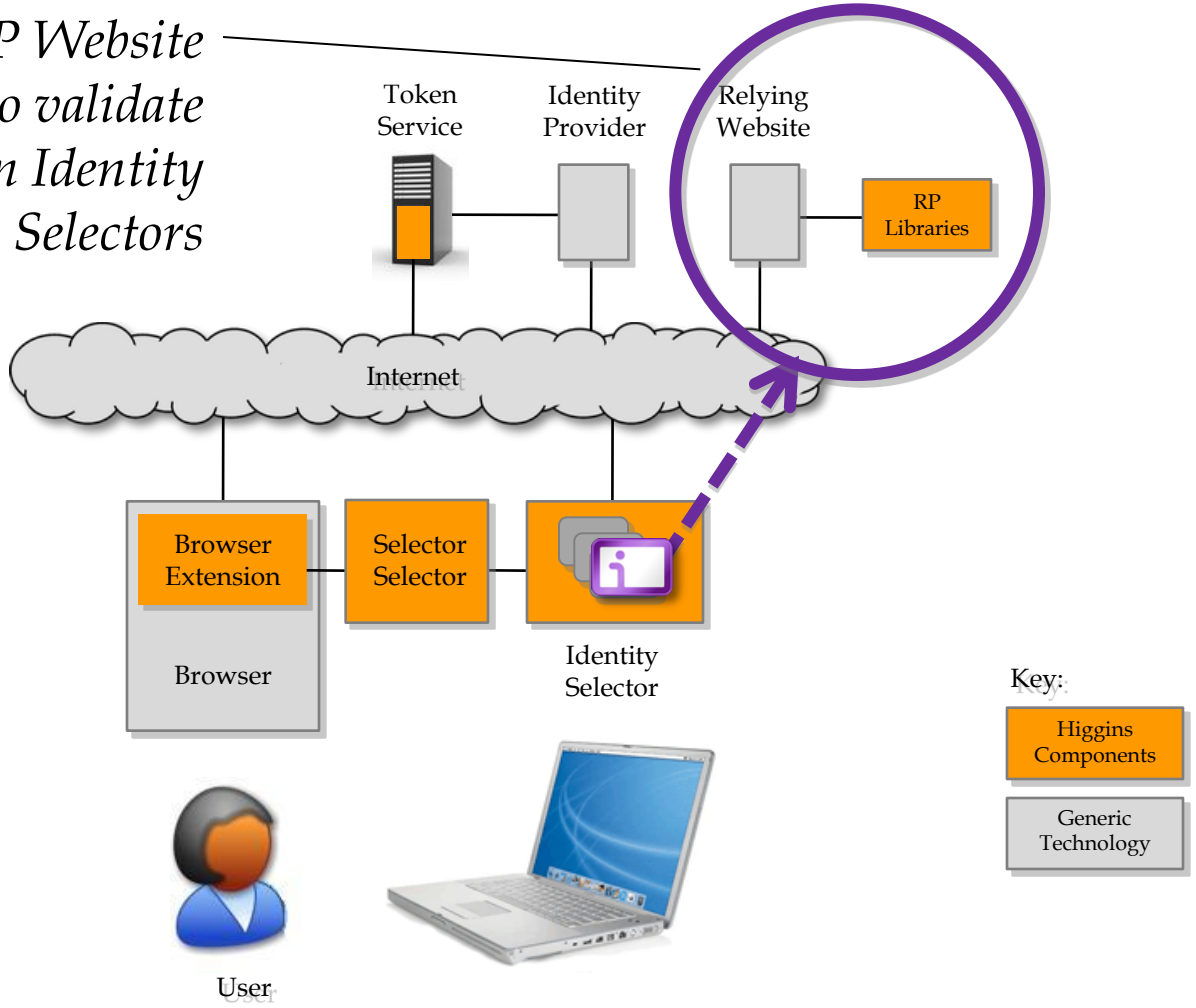
# Architecture

## Relying Party Website



# Relying Party Website
## Component View

*Higgins RP Website provides code to validate tokens from Identity Selectors*

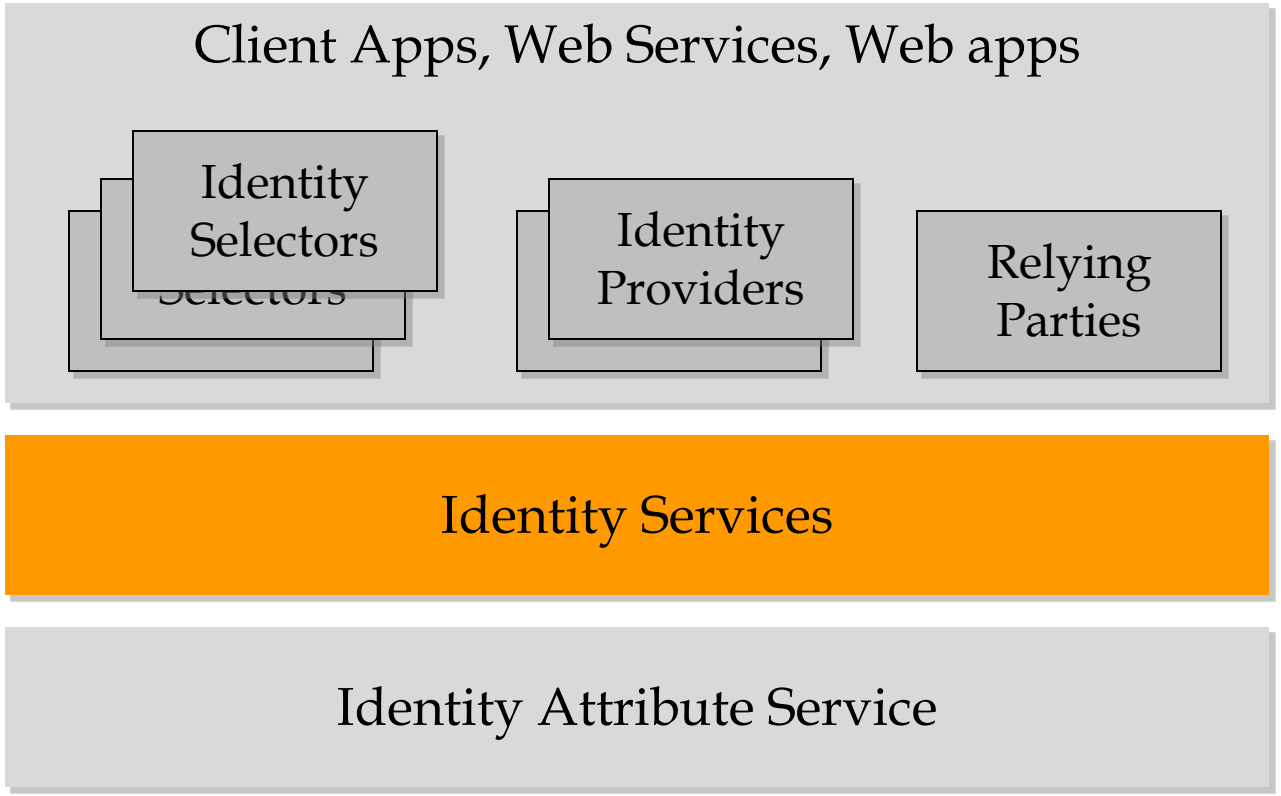


# Relying Party Website
## Multi-Protocol Support

- Multi-Protocol Relying Party Website Enablement
  - Information Card authentication
  - OpenID authentication

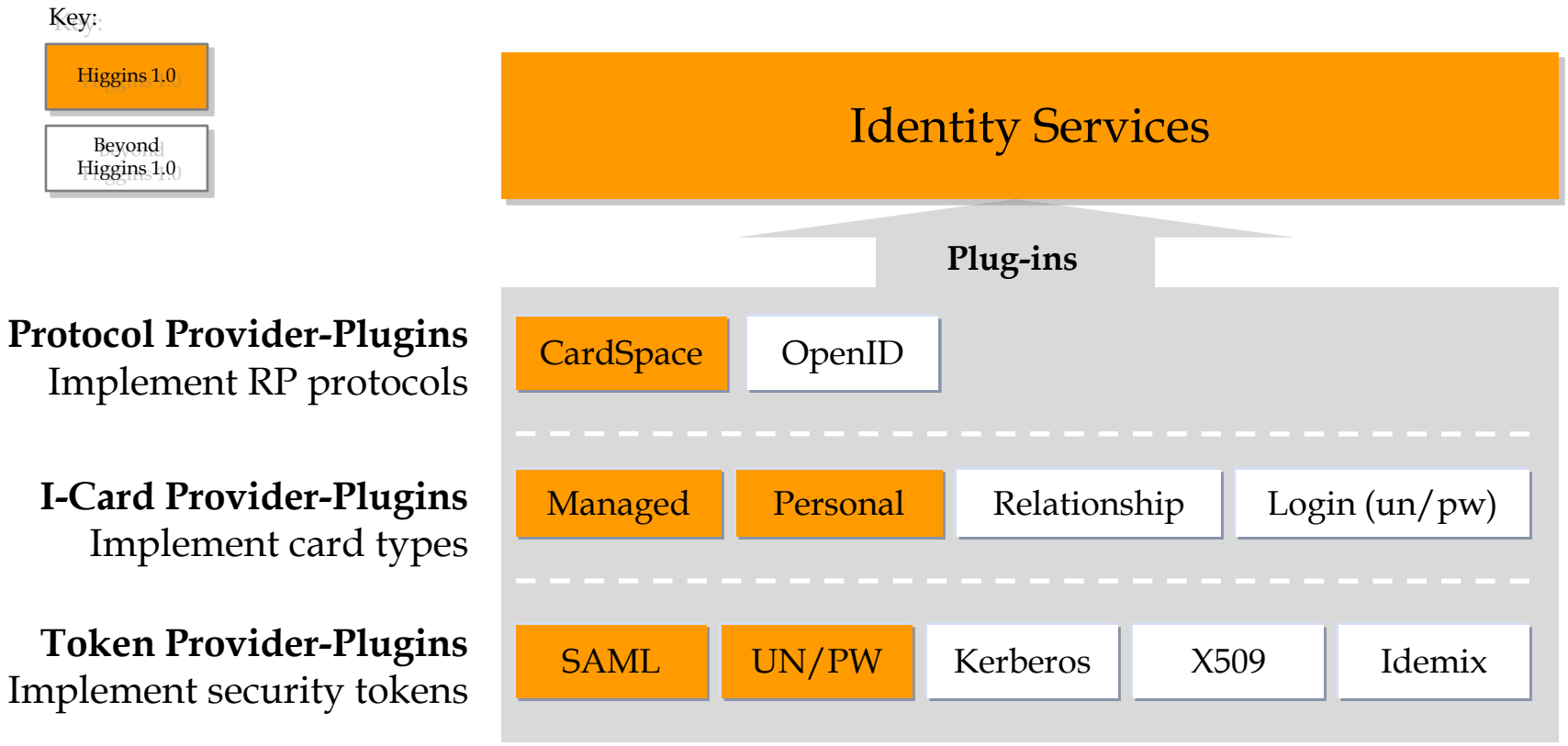
# Architecture

## Identity Services



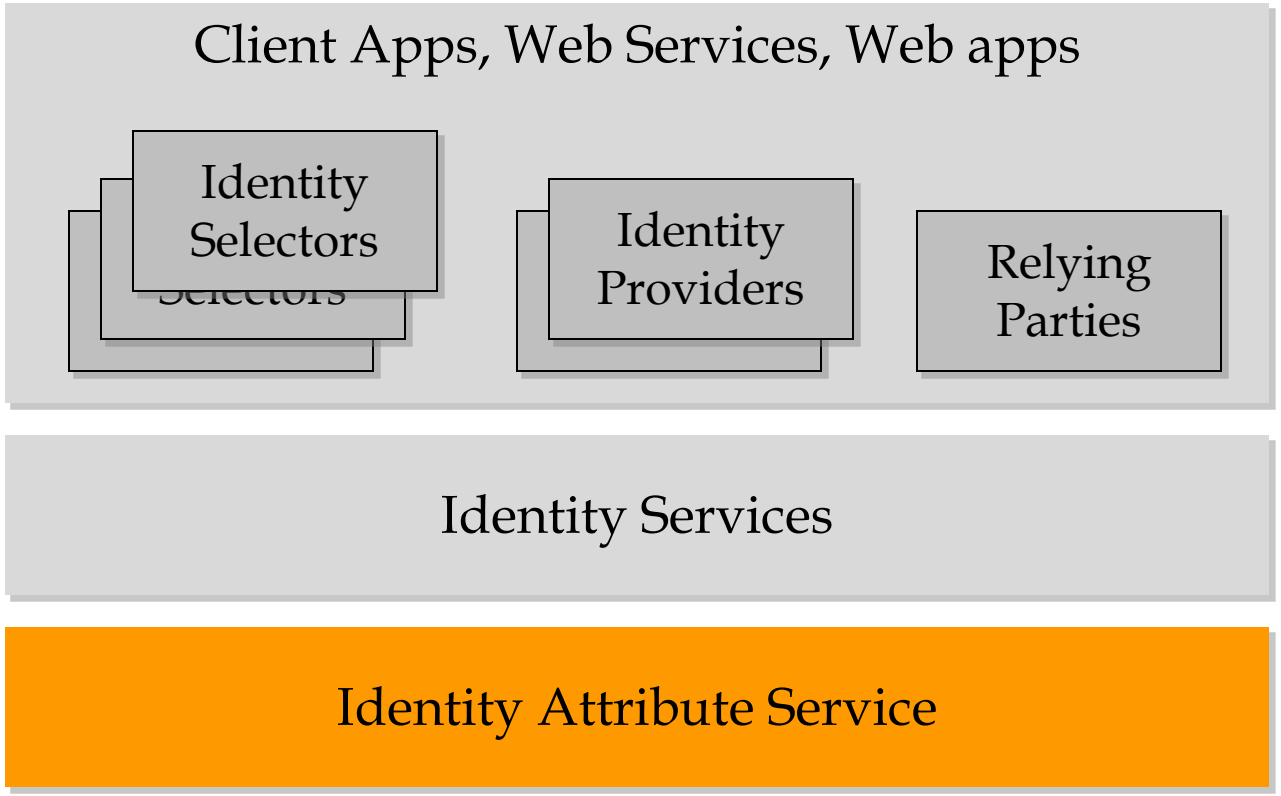
# Architecture

## *Extensible* Identity Services



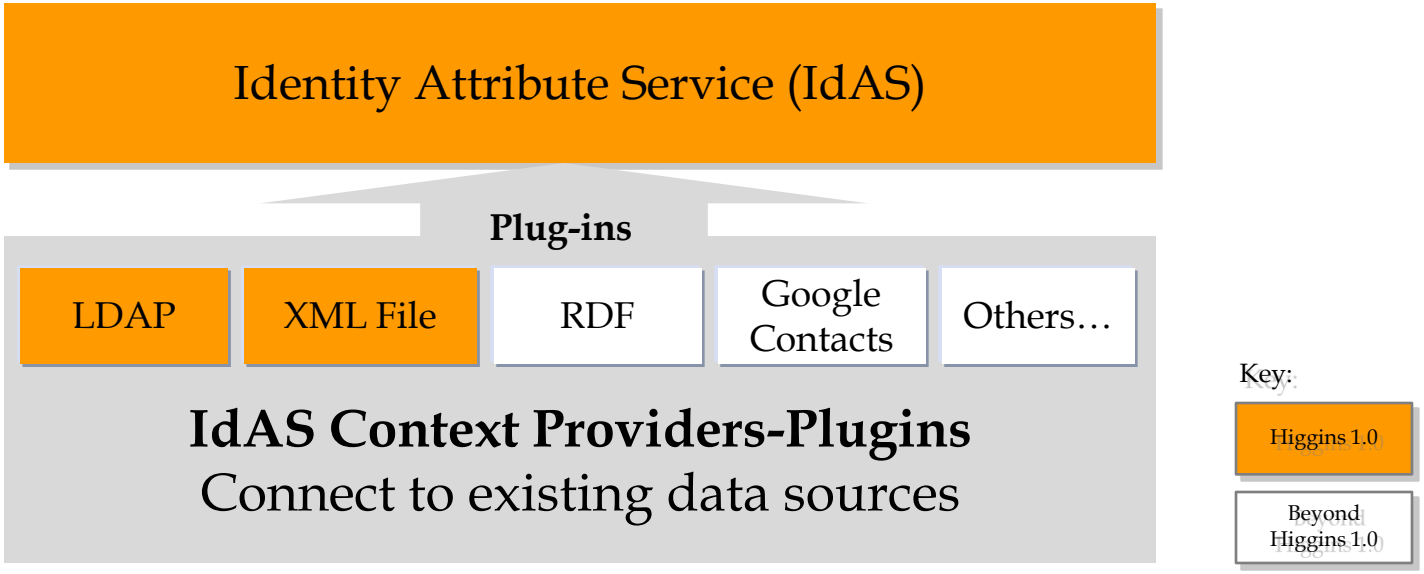
# Architecture

## Identity Attribute Service



# Architecture

## *Extensible* Identity Attribute Service



# Identity Attribute Service

- The Context Data Model is implemented by Identity Attribute Service
- Contexts may be accessed using IdAS may employ a variety of authentication approaches
- The contained Entities may be inspected, navigated and or modified based on authorization policy of the Context
- IdAS is extended by Context Providers (plugins)
- Context Providers map existing data sources into the Higgins Context Data Model

# Identity Attribute Service
## Context Data Model (CDM)

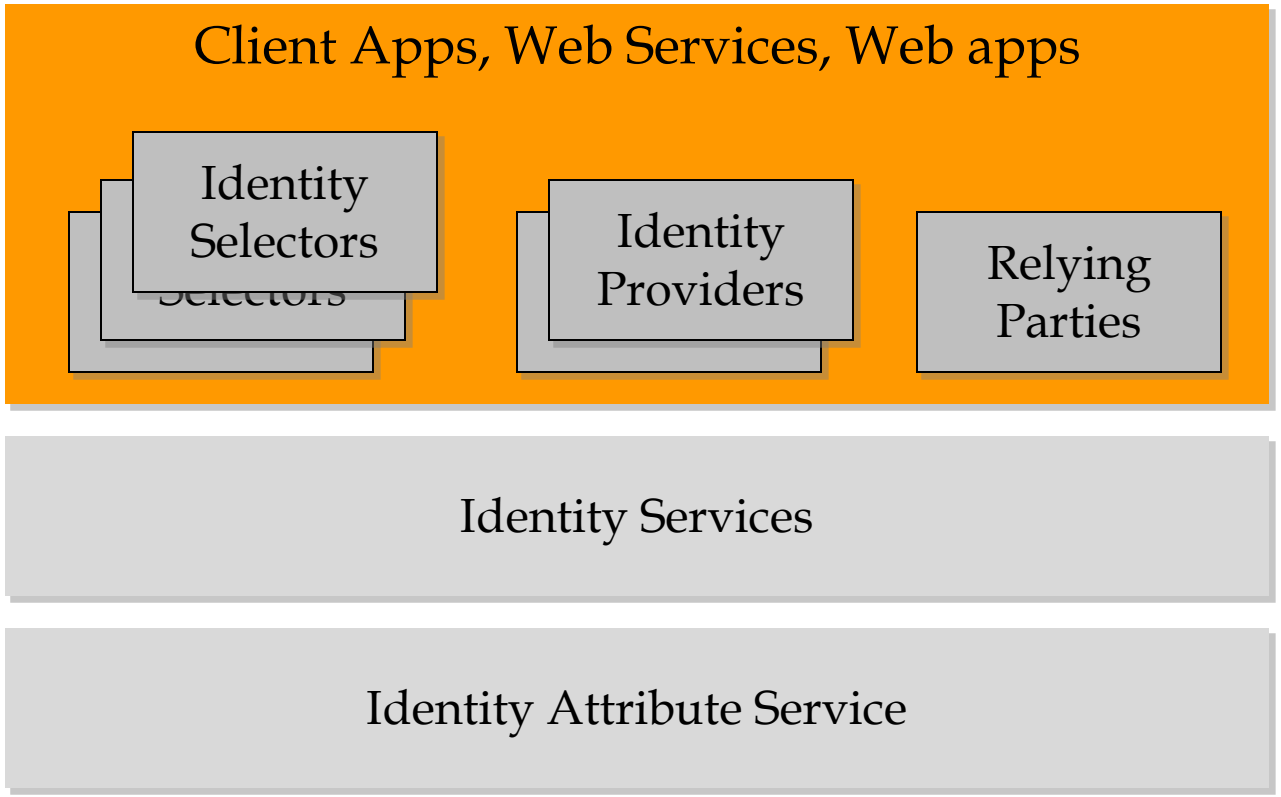
- Data sources are called *Contexts*
  - E.g. enterprise directories, social networks, RDF repositories
- Contexts contain objects called *Entities*
  - Entities represent people, organizations, etc.
- Entities have *Attributes*; Attributes have values
- The core semantics of the model are based on RDF & OWL

# Identity Attribute Service
## CDM extends RDF

- Globally linked data
  - Higgins uses UDIs not just HTTP URIs
  - Some EntityId UDI ids may be globally resolved into a global object graph
- Supports protocols beyond HTTP
  - Uses XRDS discovery of UDI endpoint metadata, including protocol for data access
- Read and write access
  - Access Control management & enforcement

# Architecture

## Interoperability Points



# Interoperability Event Participants
## RSA 2008

# Interoperability Event Participants
## RSA 2008

**Projects**

# Section Two: Higgins 1.1

June 2009

# AIR-Based Selector

- Based on Adobe AIR
  - Integrates with Firefox, IE, and Safari
  - Runs on Windows, OSX and soon Linux
  - More secure
- Replaces the Firefox-embedded selector

# Identity Attribute Service
## Access Control Enhancements

- Policy query API
- Policy management API
- Policy semantics modeled directly as Policy Entities and attributes

# Identity Attribute Service
## New Context Providers

- Google Contacts
- Open Social
- Facebook F8
- Wrappers for various ID-WSF services (maybe)

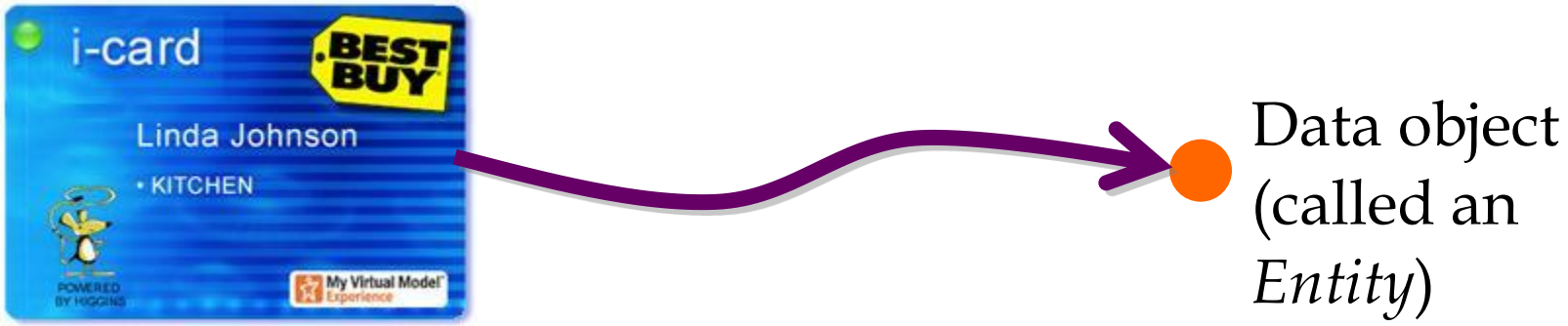
# Identity Attribute Service
## XDI Protocol Support

- XDI Engine provides a new binding for the IdAS Service
  - Allows any/all attribute data managed by IdAS to be exposed as an XDI data service
- XDI Context Provider
  - Allows IdAS to read/write XDI-native data sources

# Relationship Cards

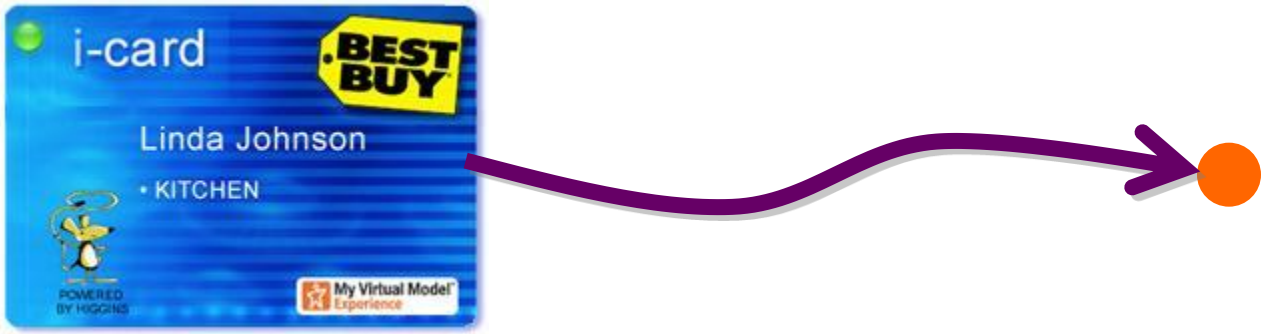

**Relationship Card**
What you and Best Buy say about you

# Relationship Cards
## Human Friendly Data References



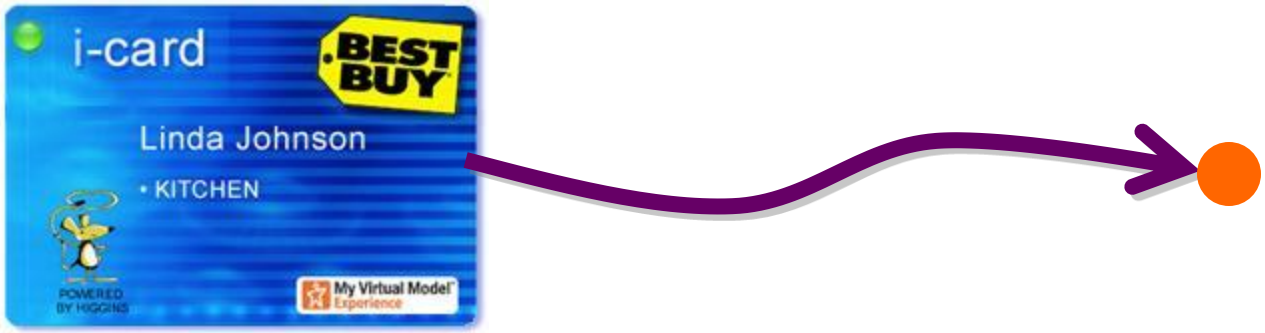

- Card holds a UDI (URI) reference:
  - A ContextId that identifies a data source, and
  - A local EntityId object within the context
- See http://parity.com/udi

# Relationship Cards
## Data Location and Authority




- Best Buy issued card
- Entity is stored in Best Buy's data center
- Best Buy is authoritative over some attributes
- You are authoritative over some attributes (e.g. street address)

# Relationship Cards
## Data Model



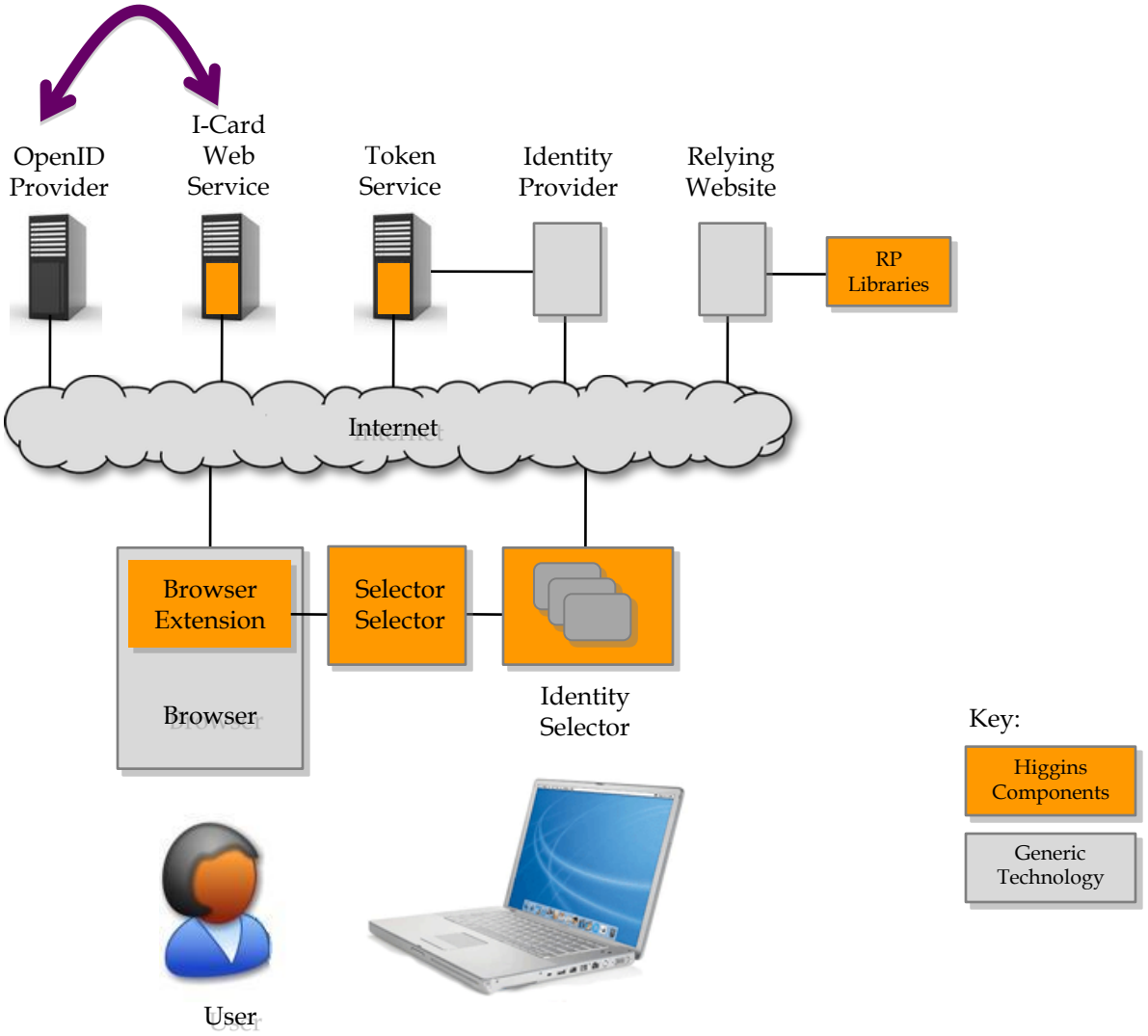

- The Entity is described by the Higgins *Context Data Model*
- Can be accessed using the Identity Attribute Service

# Other New Card Types

- Username/Password Card
  - To log in to traditional un/pw sites
- SAML Card  (aka S-card) [maybe]
  - Uses SAML protocol to retrieve token
- Idemix card  (aka Z-card) [maybe]
  - Support for a new privacy-enhancing token type based on zero-knowledge proofs
  - Improved support for selective disclosure

# Selector as an OpenID Service

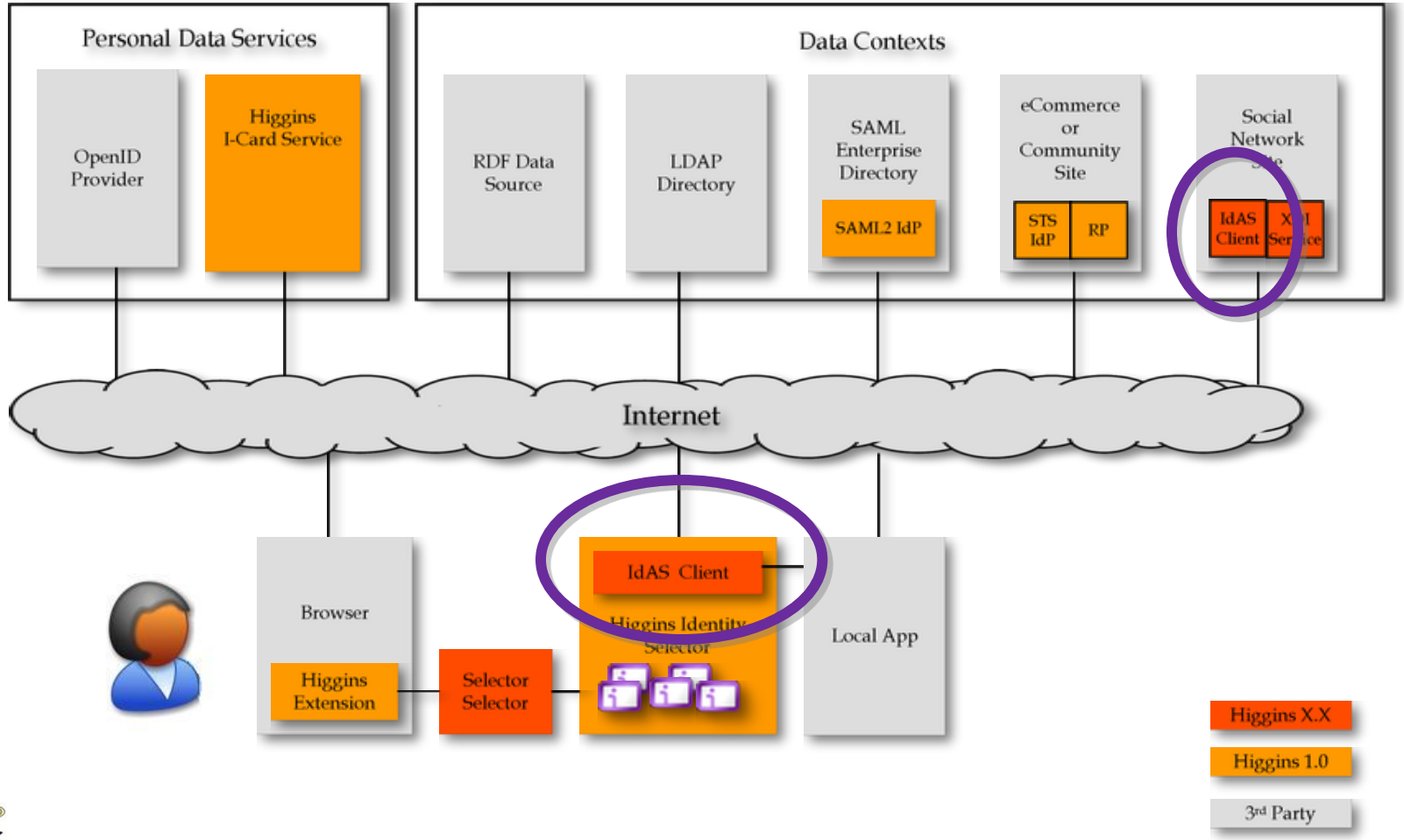
*OpenID 2.0 OP with associated Higgins Selector Service*



# ID-WSF Support (maybe)

- There have been some recent, focused discussions on the integration of Higgins and ID-WSF
- Higgins I-Card Service could implement:
  - ID-WSF Discovery Service
  - ID-WSF Authentication Service (I think)
- Higgins Context Providers would be written for various ID-WSF services
- Integration with R-Cards and XRDS
- Would rely on the OpenLiberty.org code base

# IdAS Client Component (maybe)



# Section Three:
# Beyond Higgins 1.1

## Mobile Higgins

Higgins project is seeking project funding and/or contributions to develop a Higgins selector for mobile platforms

# Target Platforms

- Symbian
- RIM
- Windows Mobile 6
- iPhone
- Android


# Project Co-leads

## http://higgins-project.org

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# Appendix
## Original Project Goals

# Goals: 1 of 5

- **Provide a consistent user experience based on card icons for the management and release of identity data**
- This is needed in order to have a trusted mechanism for authentication and other interactions that is less vulnerable to phishing and other attacks and that works for a wide variety of users and systems
- See Higgins 1.0 Identity Selector

# Goals: 2 of 5

- **Empower users with more convenience and control over personal information distributed across external information silos**
- Provide a single point of control over multiple identities, preferences and relationships
- See Higgins 1.0 Identity Selector

# Goals: 3 of 5

- **Provide an API and data model for the virtual integration and federation of identity and security information from a wide variety of sources**
- See Higgins 1.0 Framework

# Goals: 4 of 5

- **Provide plug-in adapters to enable existing data sources including directories, communications systems, collaboration systems and databases each using differing protocols and schemas to be integrated into the framework**
- See Higgins 1.0 Identity Attribute Service and Context Providers (plugins)

# Goals: 5 of 5

- **Provide a social relationship data integration framework that enables these relationships to be persistent and reusable across application boundaries**
- It organizes relationships into a set of distinct social contexts within which a person expresses different personas and roles
- See Higgins 1.0 Context Data Model (CDM)