



# 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.



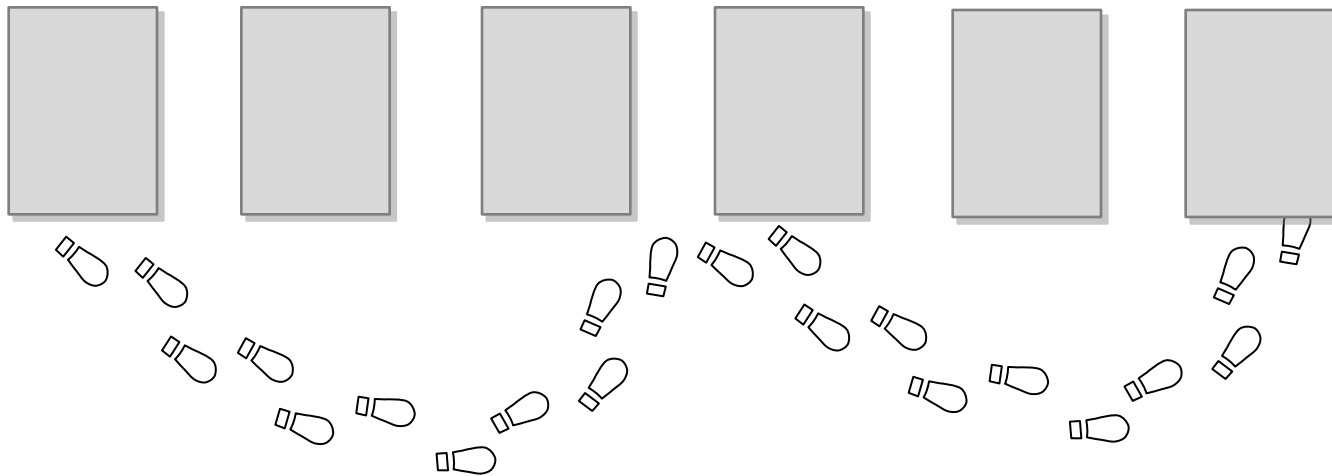
End-users experience Higgins  
through the UI metaphor of  
Information Cards using an app  
called an *Identity Selector*

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

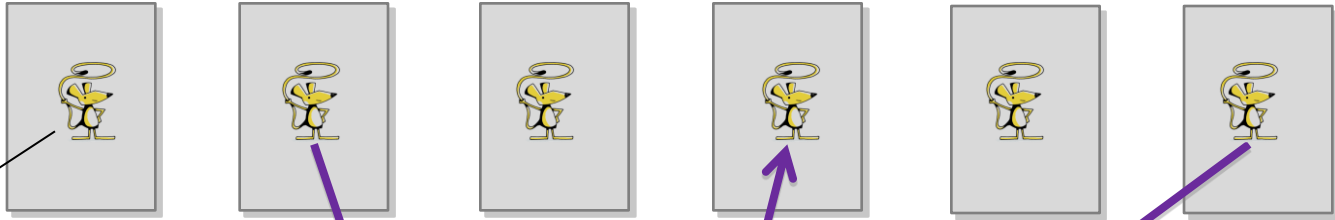
Websites...



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



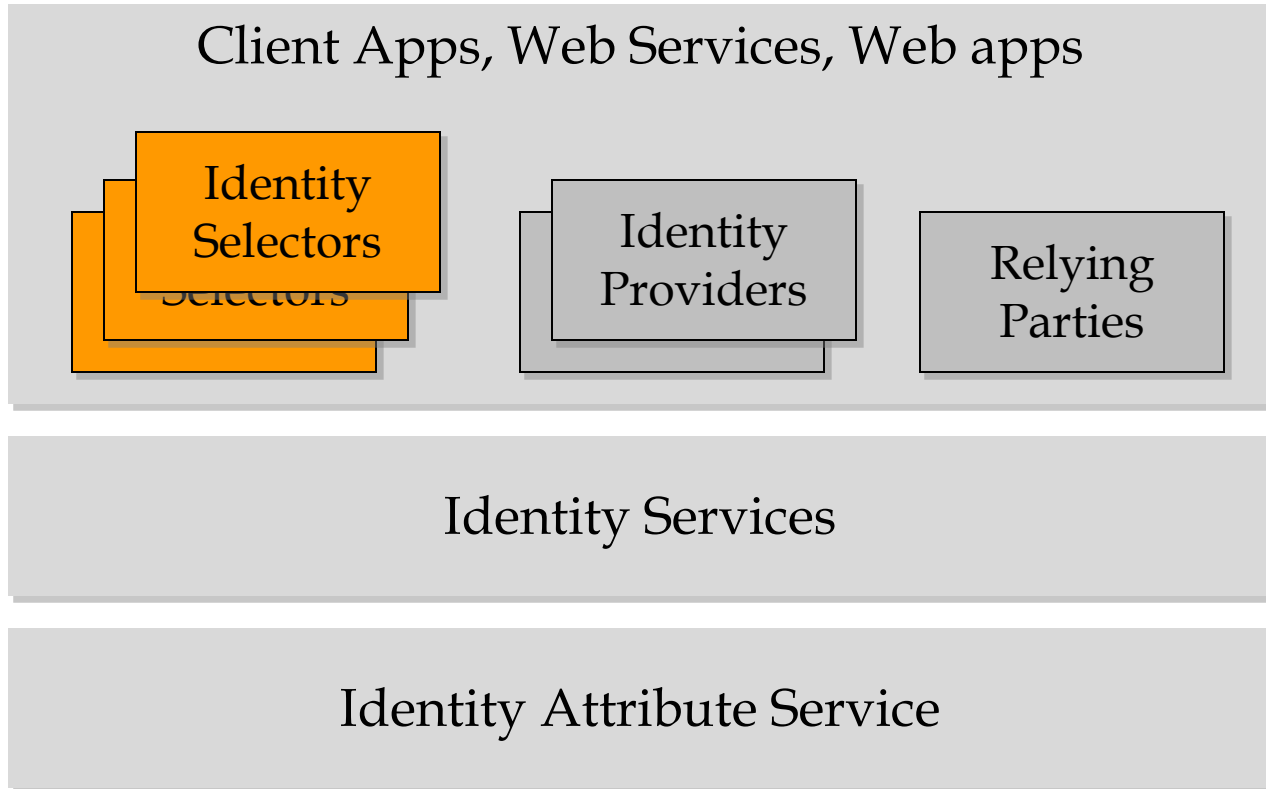
*Each card is a slice of the digital you (or a friend of yours) held in some data silo.*

*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





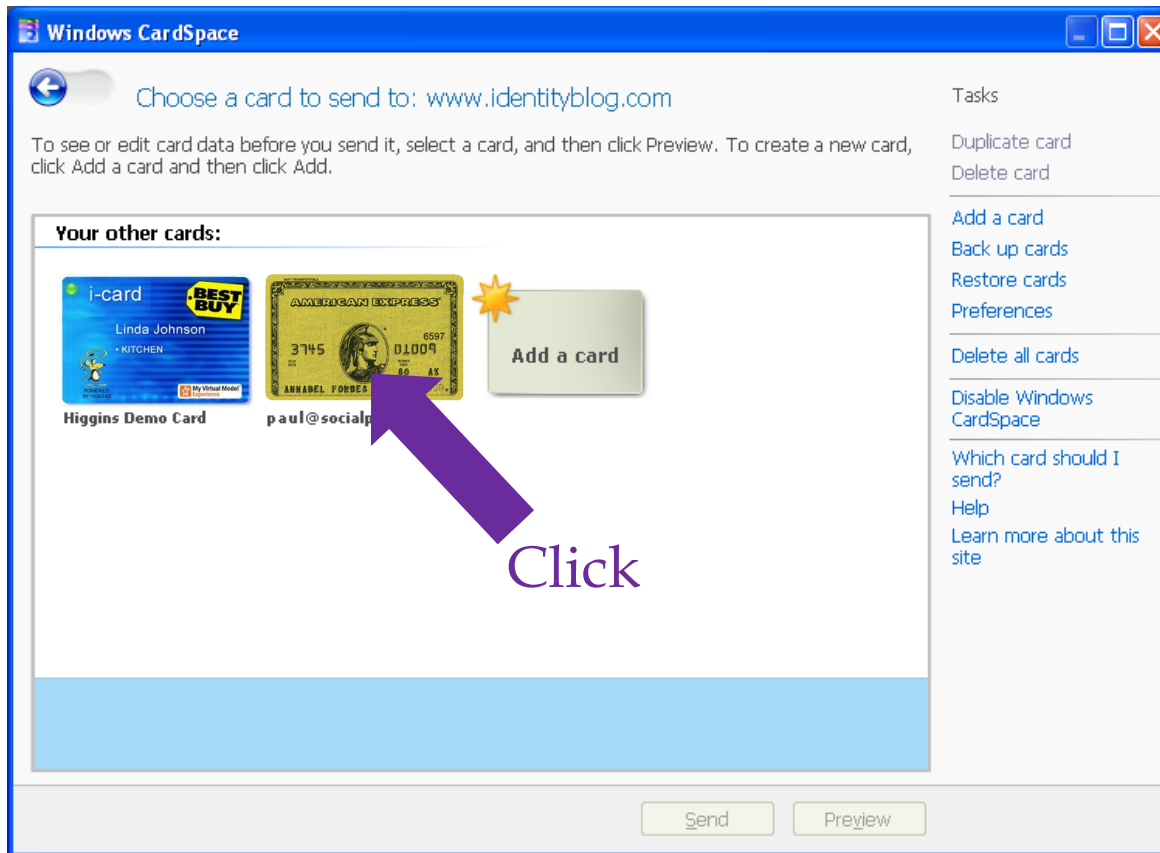
# How to Use I-Cards

- 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

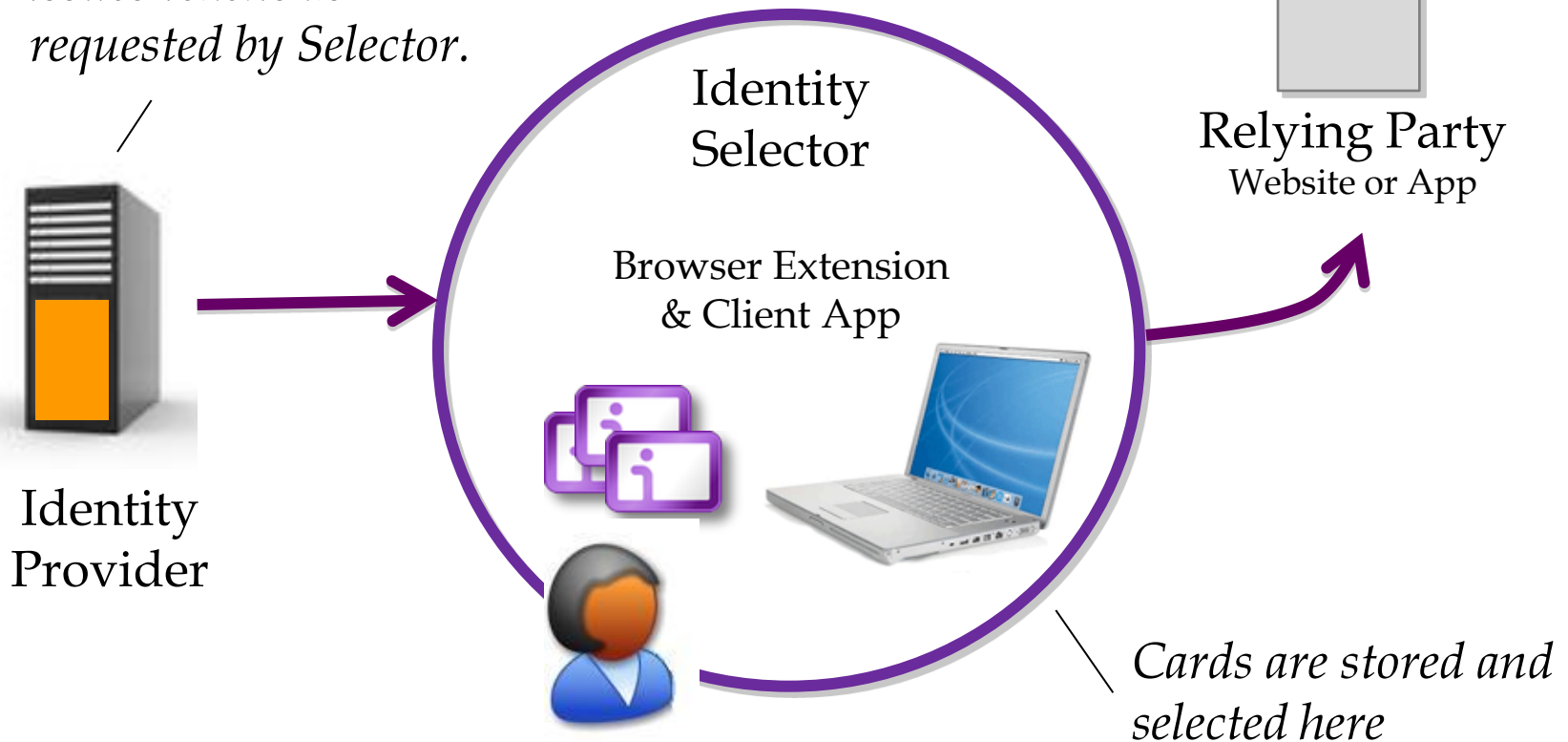


# Identity Selectors

## 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*



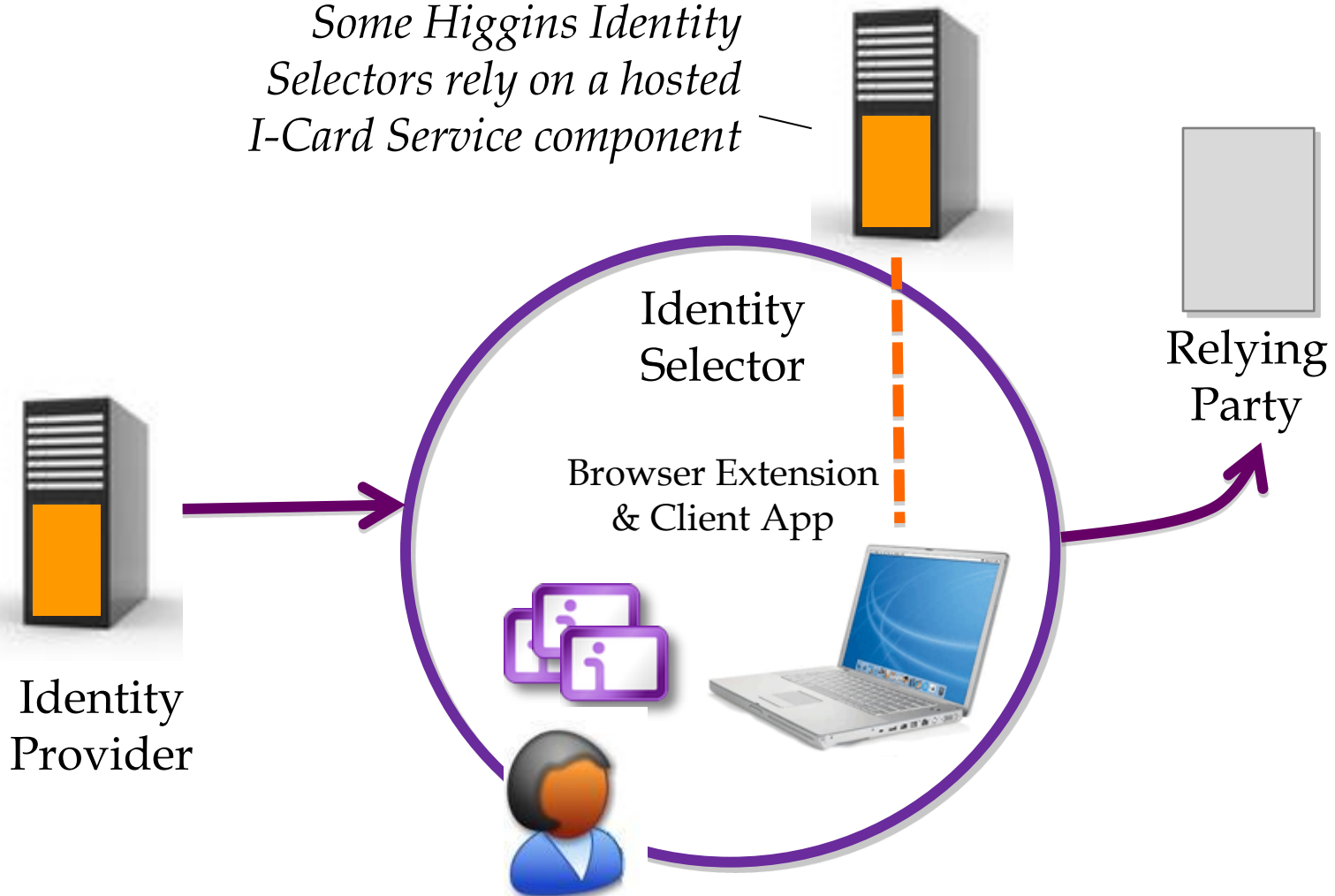
*Cards are stored and selected here*



# Identity Selectors

## Cards and Tokens Flow

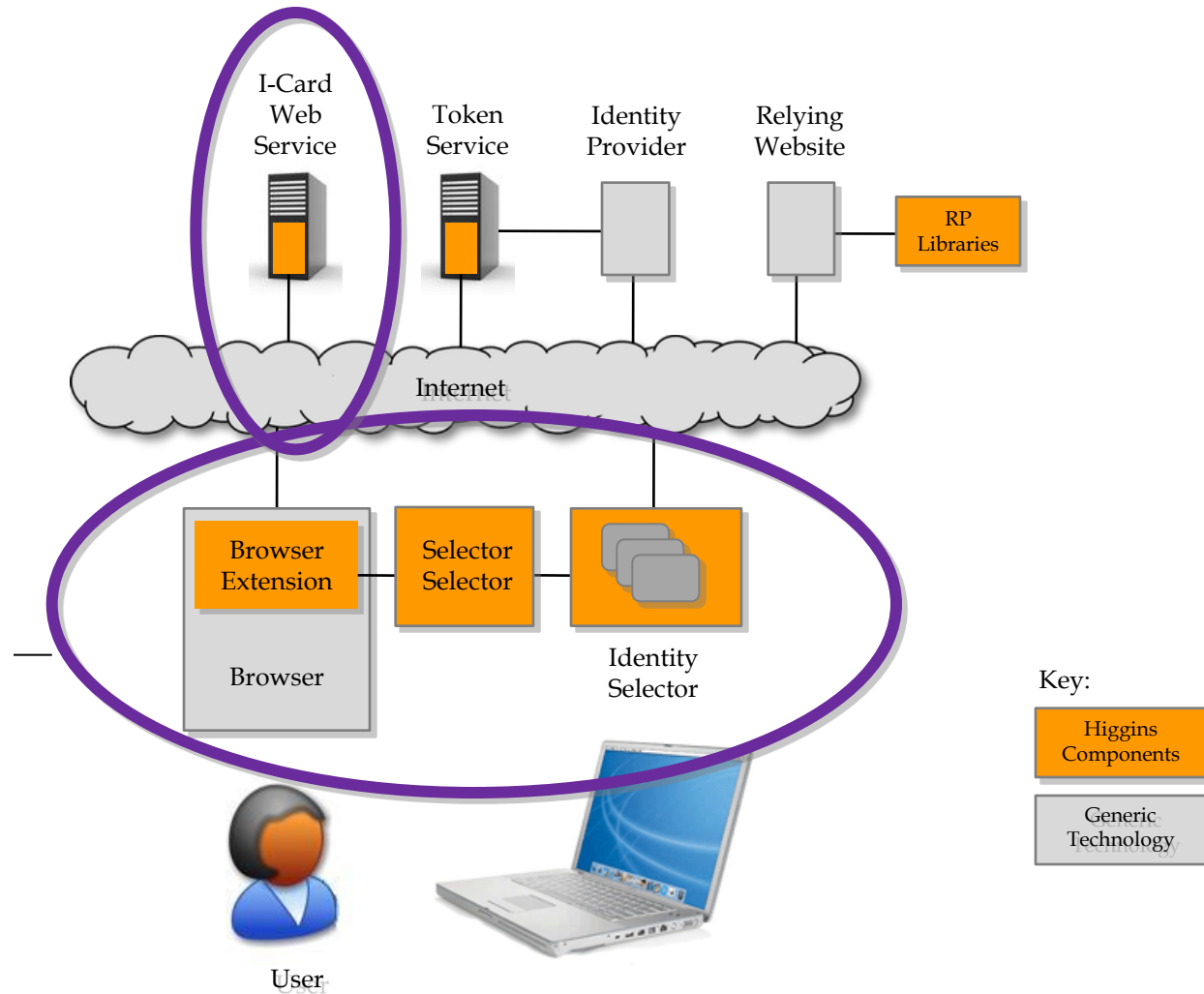
*Some Higgins Identity Selectors rely on a hosted I-Card Service component*



# Identity Selector

## Component View

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



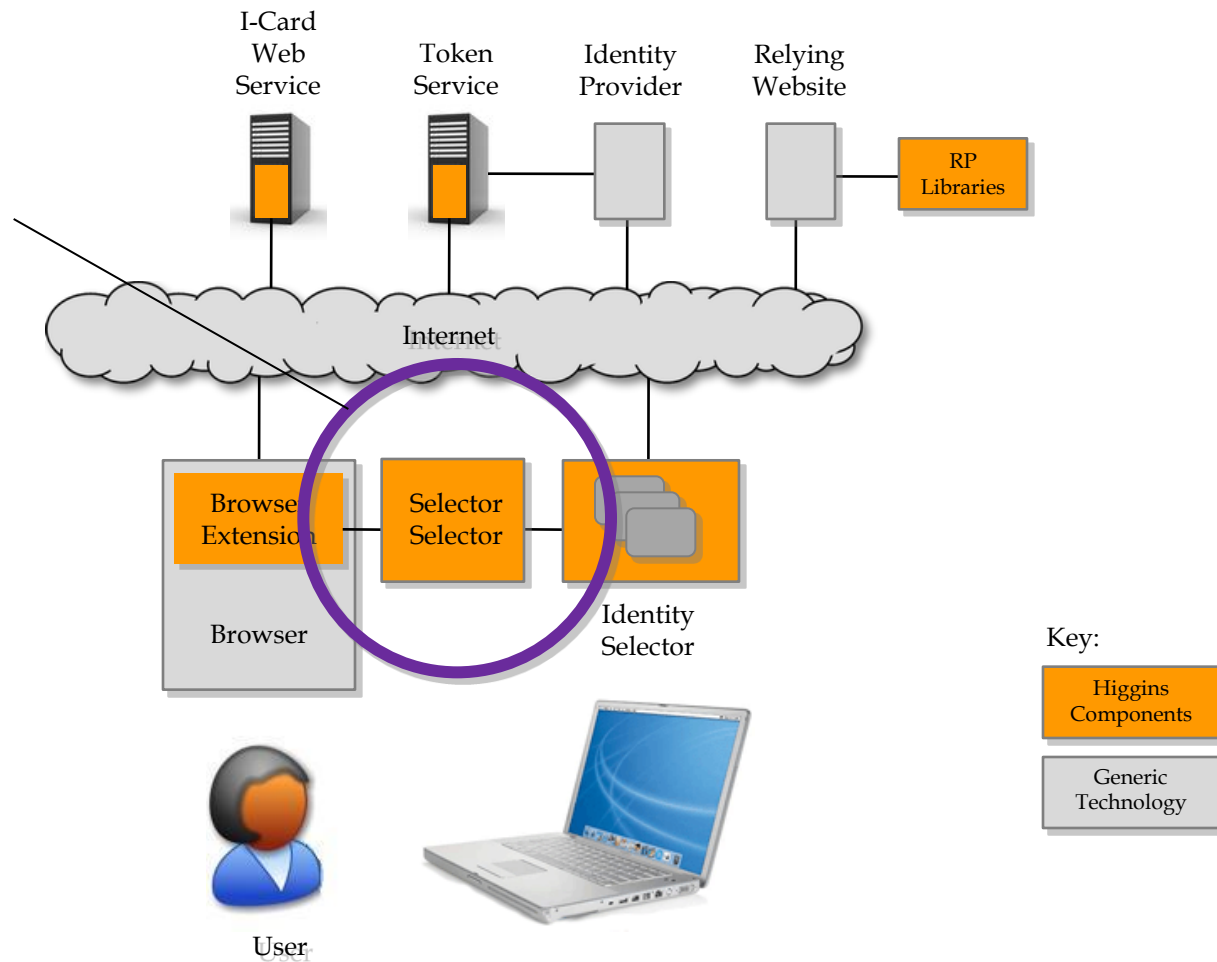


# Identity Selector

## Selector Selector – Component View

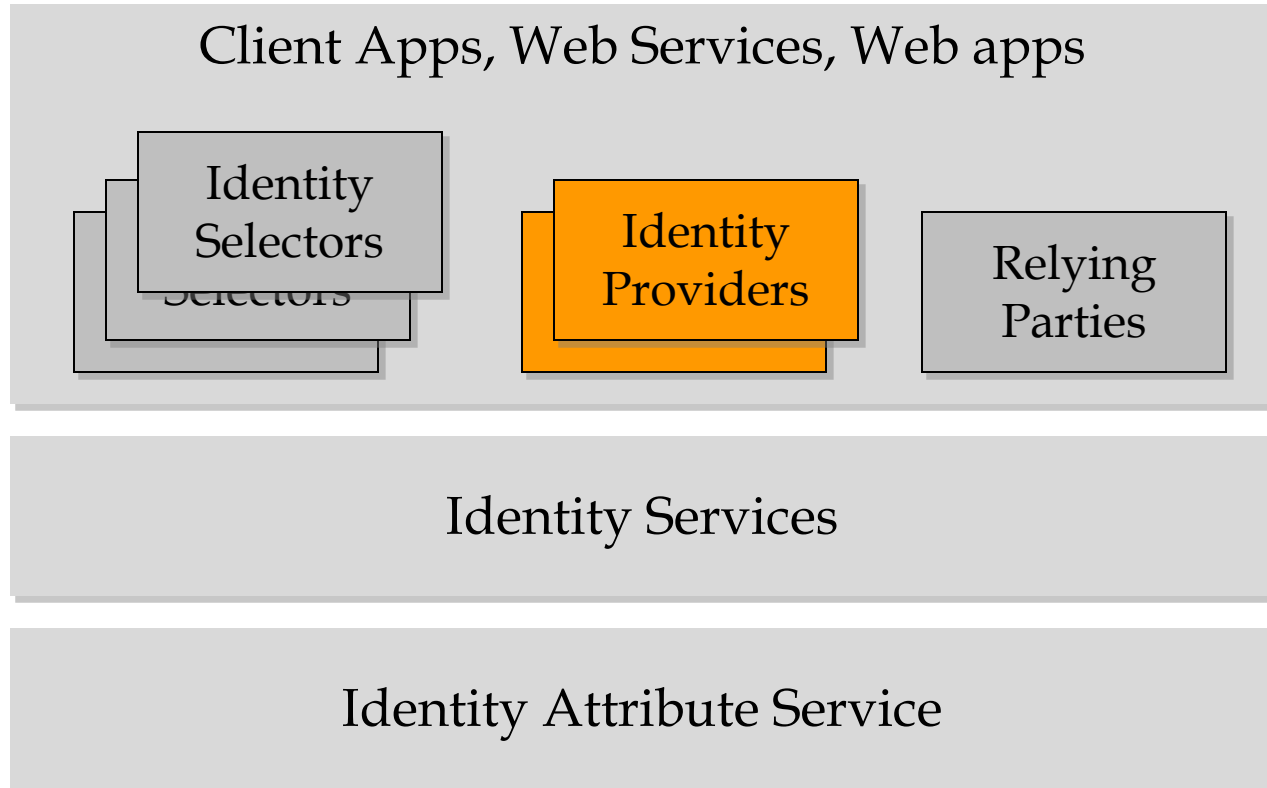
*Higgins includes a Higgins Selector Selector component (Windows-only)*

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



# Architecture

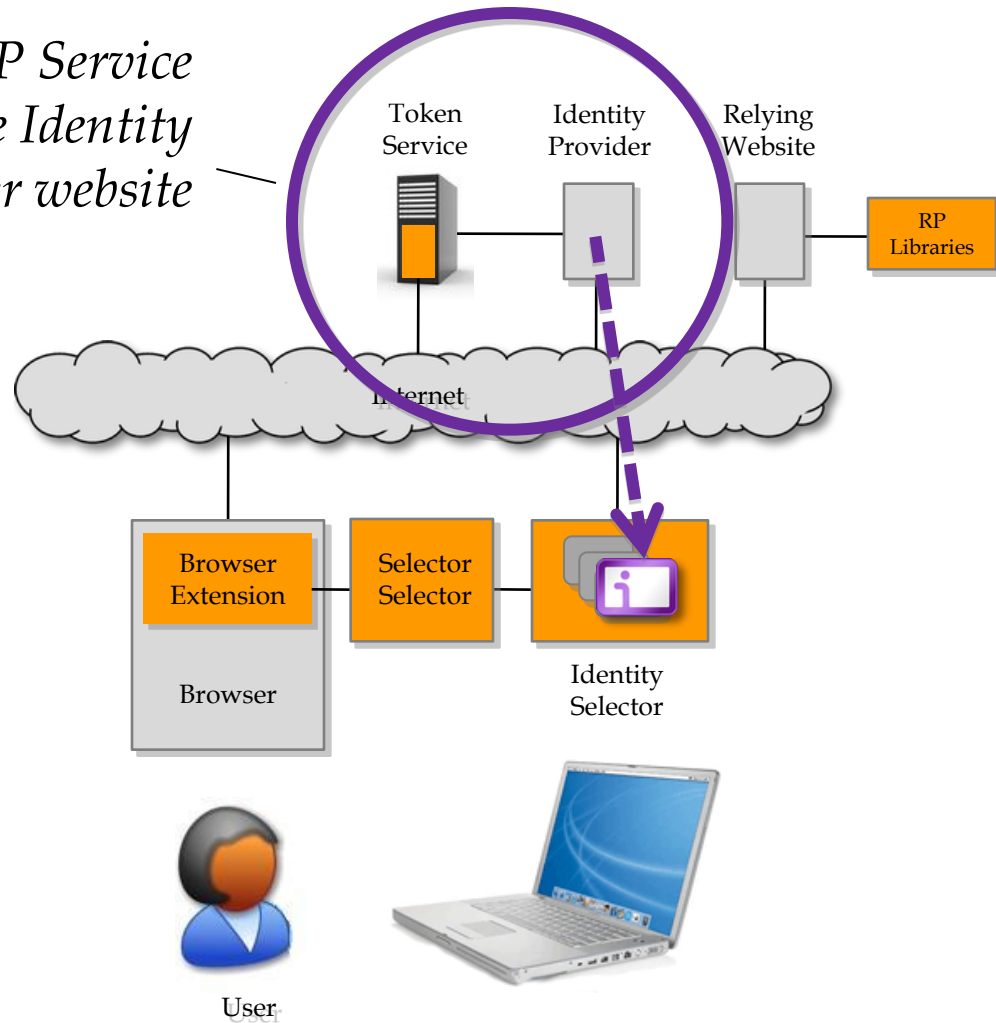
## Identity Providers



# Identity Providers

## Component View

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



# Identity Providers

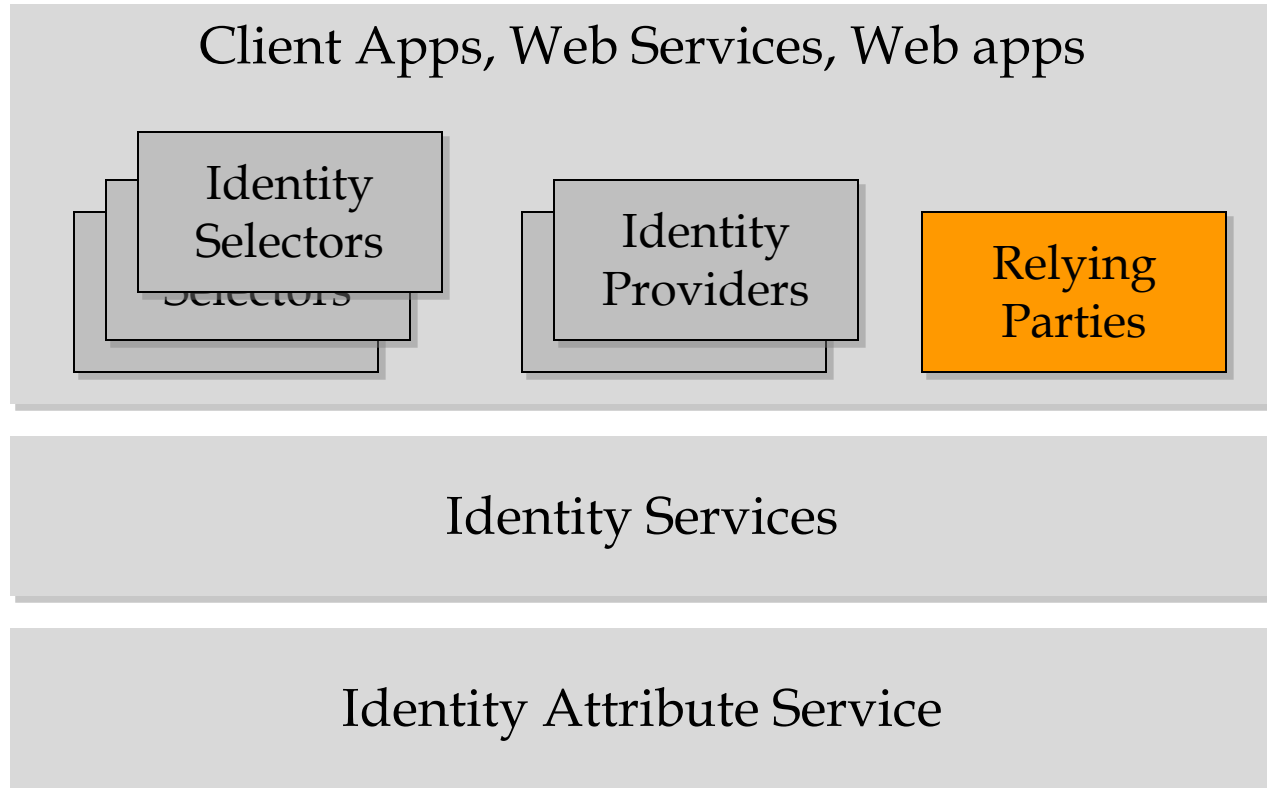
## Two Flavors

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



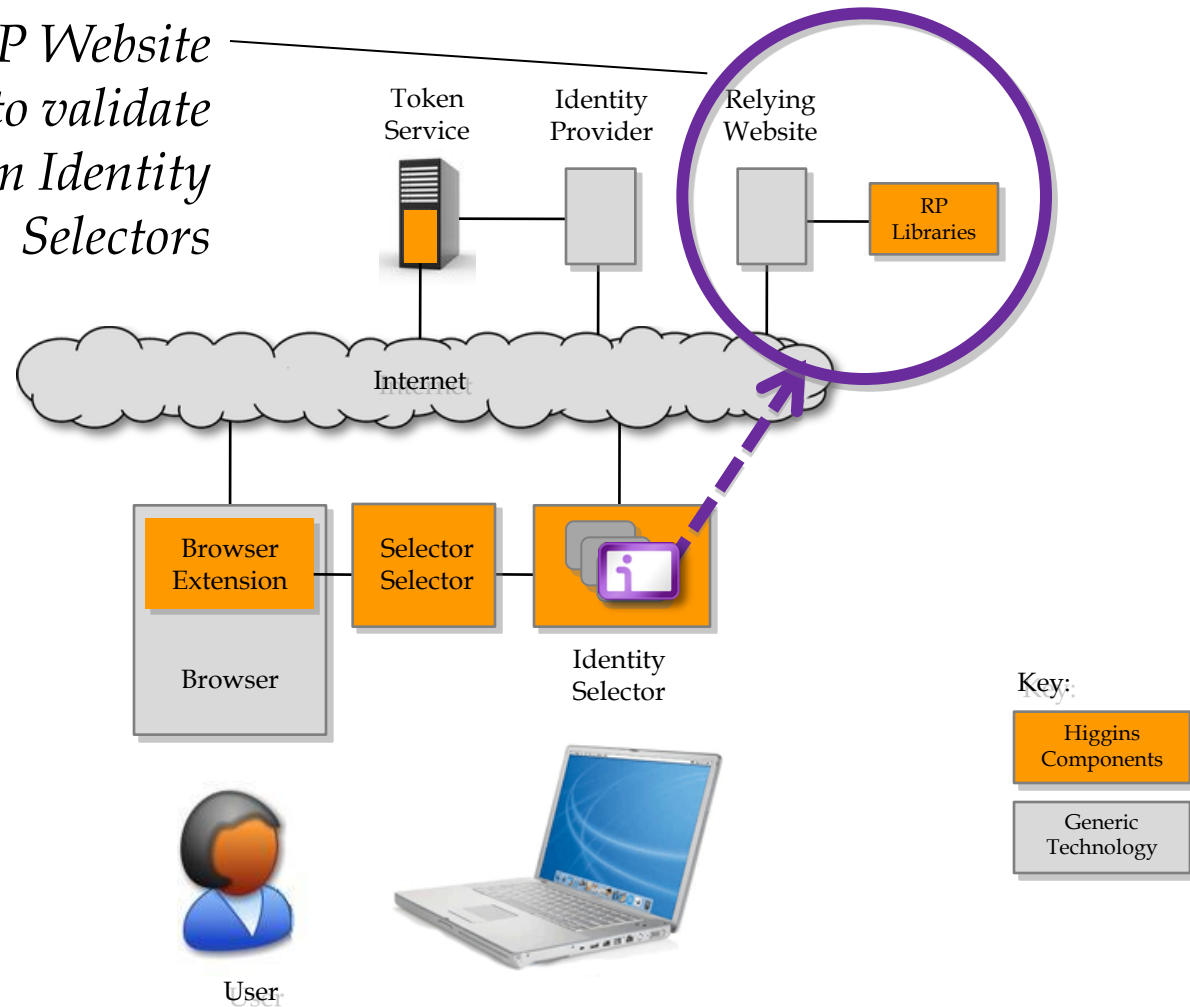
# Architecture

## Relying Party Website



# Relying Party Website Component View

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



# Relying Party Website

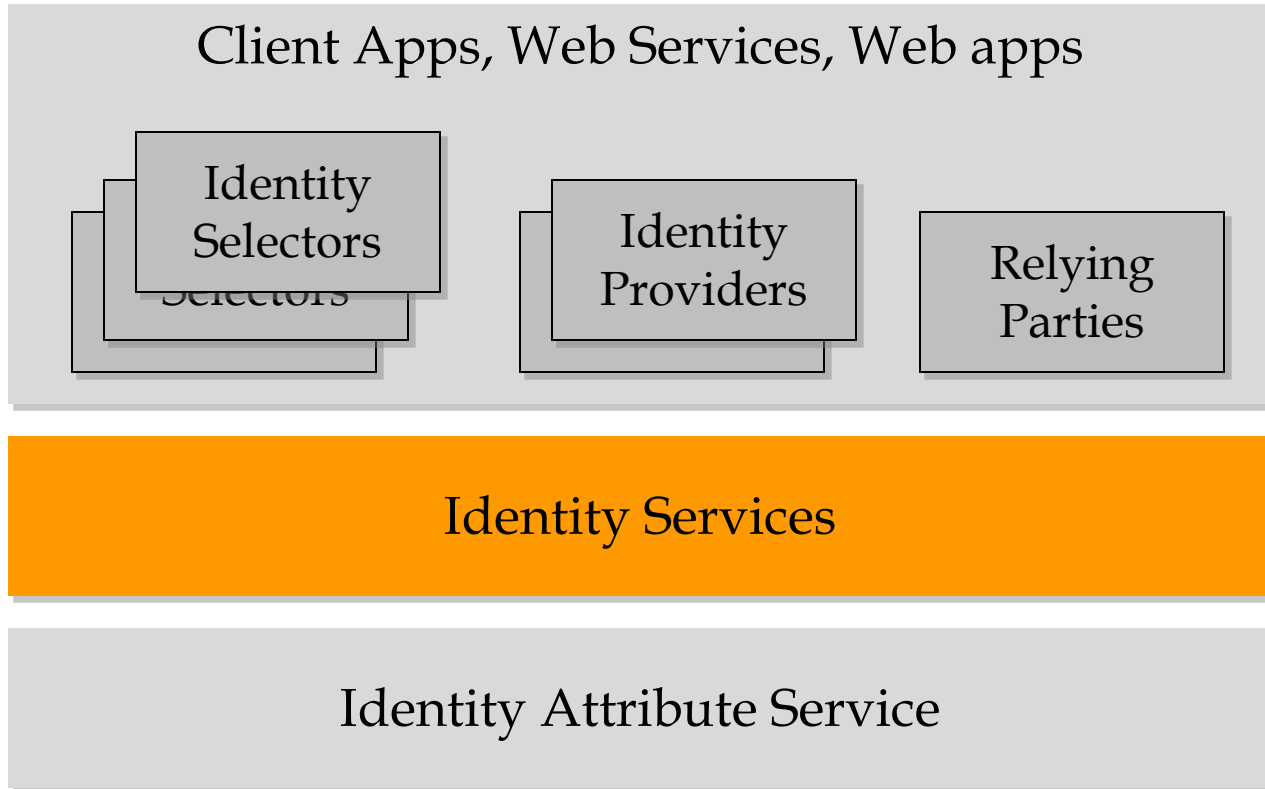
## Multi-Protocol Support

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



# Architecture

## Identity Services





# Architecture

## *Extensible Identity Services*

Key:

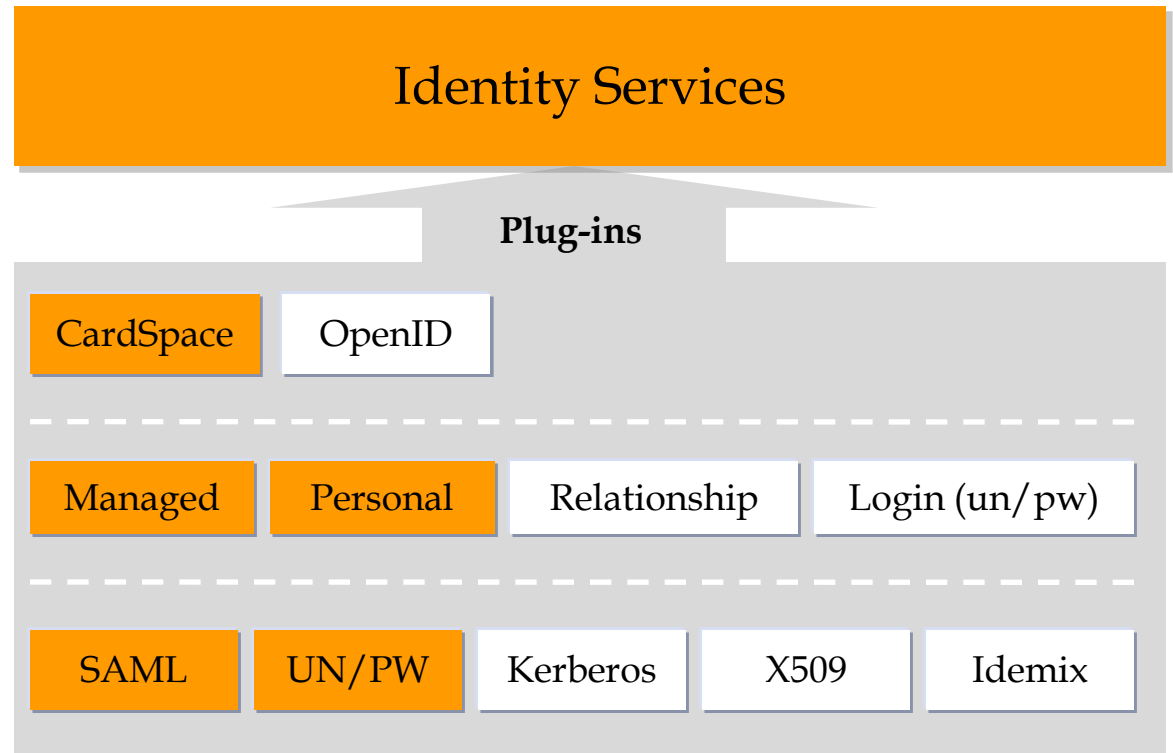
Higgins 1.0

Beyond  
Higgins 1.0

**Protocol Provider-Plugins**  
Implement RP protocols

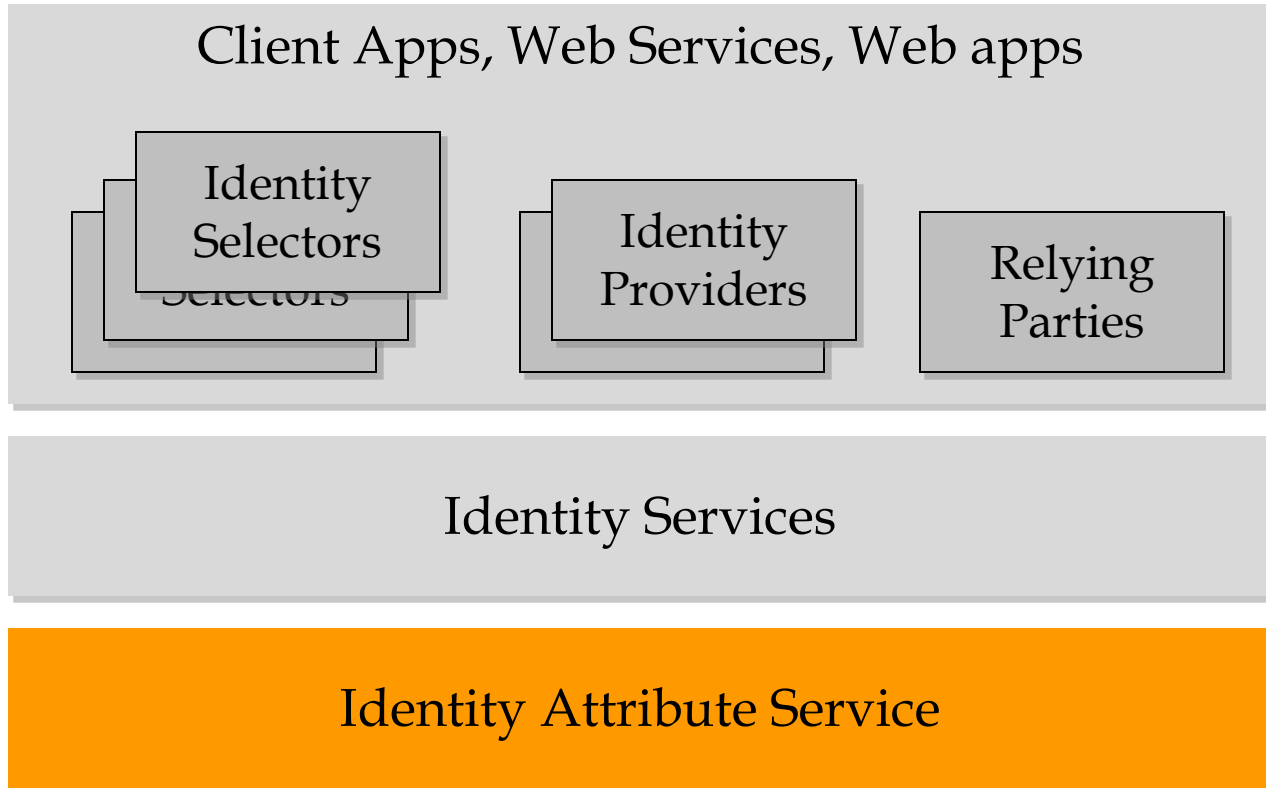
**I-Card Provider-Plugins**  
Implement card types

**Token Provider-Plugins**  
Implement security tokens



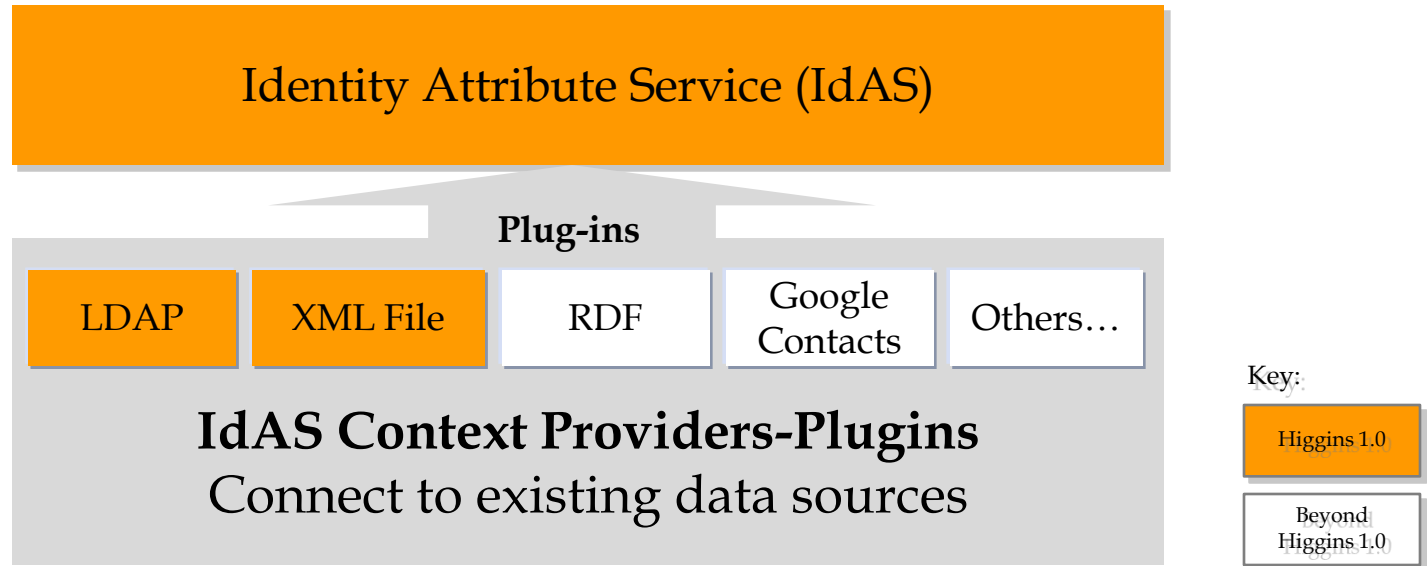
# Architecture

## 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

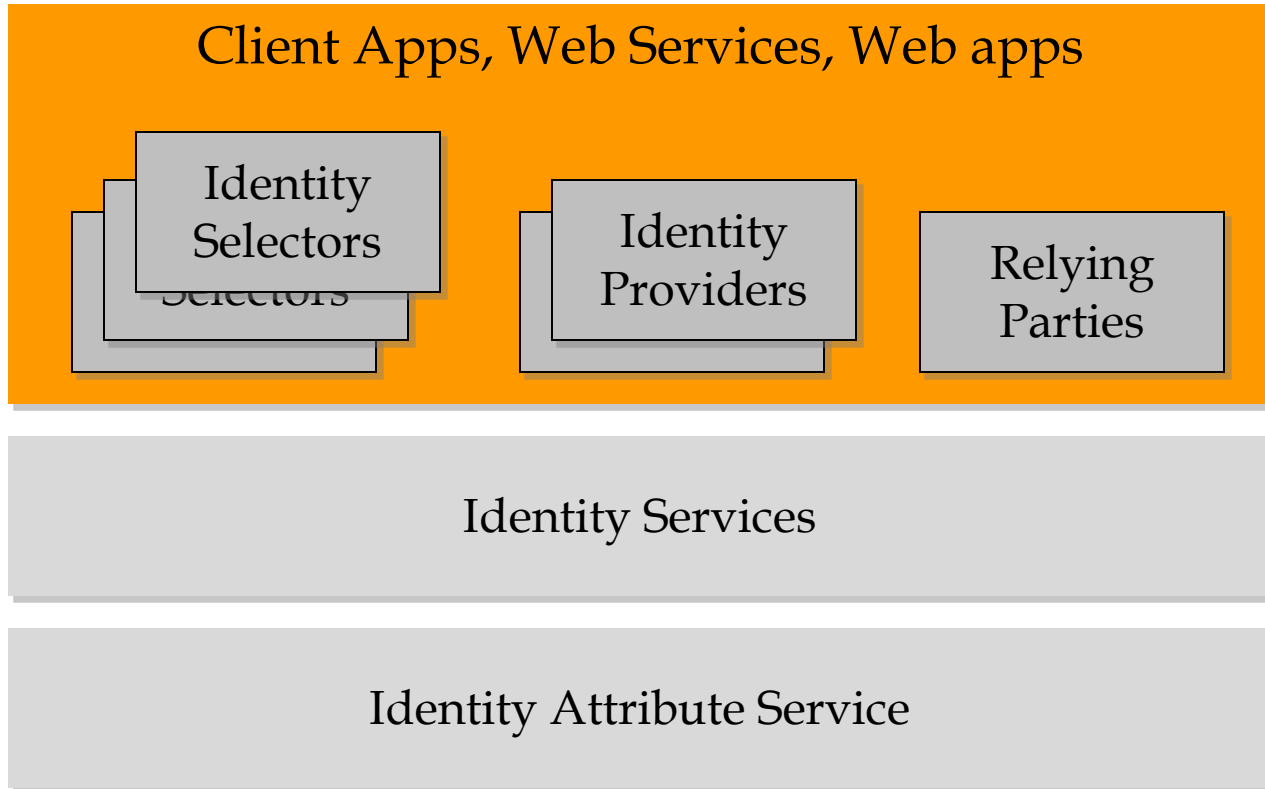
## CDM extends RDF

- 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

### Companies





# 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



Data object  
(called an  
*Entity*)

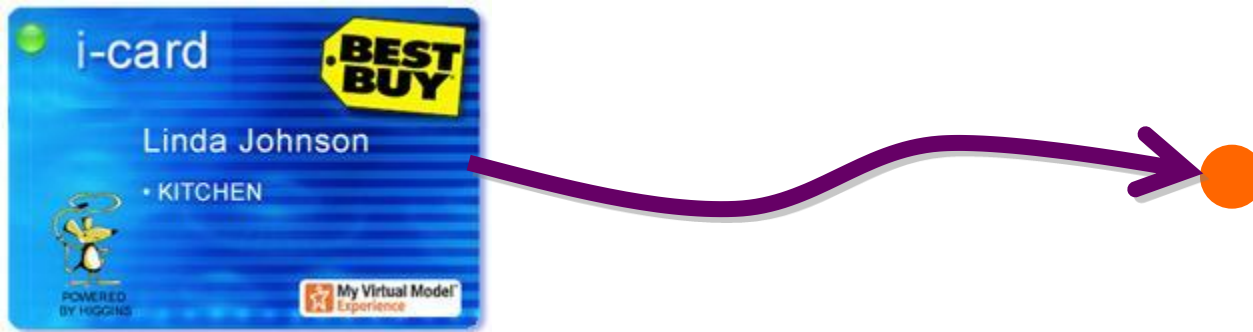
- Card holds a UDI (URI) reference:
  - A ContextId that identifies a data source, and
  - A local EntityId object within the context
- See <http://parity.com/udi>





# Relationship Cards

## Data Location and Authority

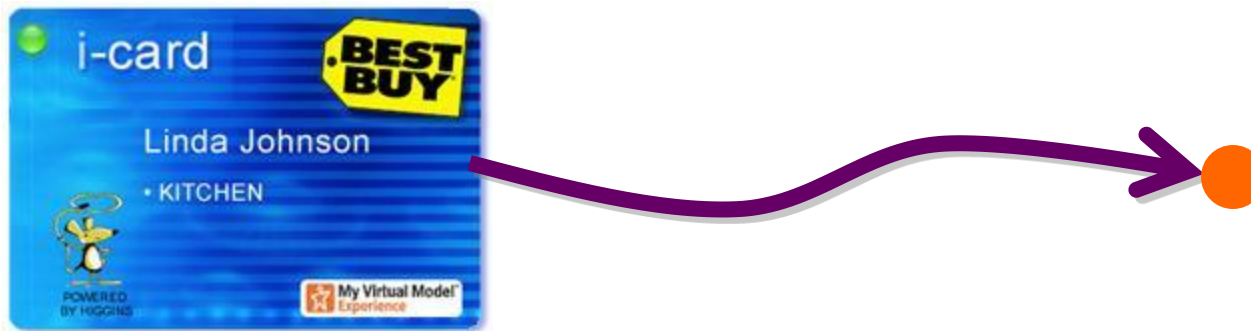


- Best Buy issued card
- Entity is stored in Best Buy's data center
- Best Buy is authoritative over some attributes
- You are authoritative over some attributes (e.g. street address)



# Relationship Cards

## Data Model



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



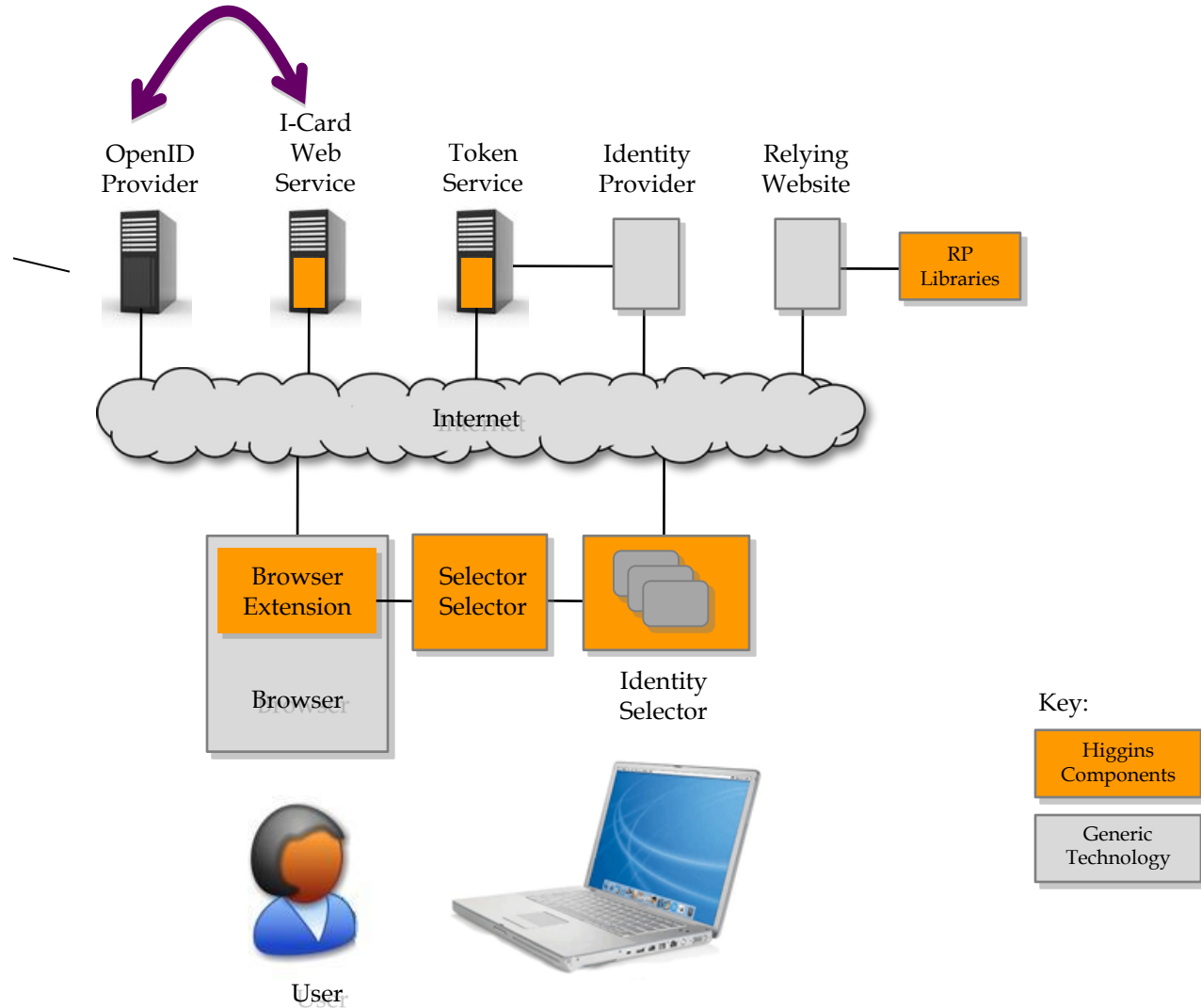
# Other New Card Types

- 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*

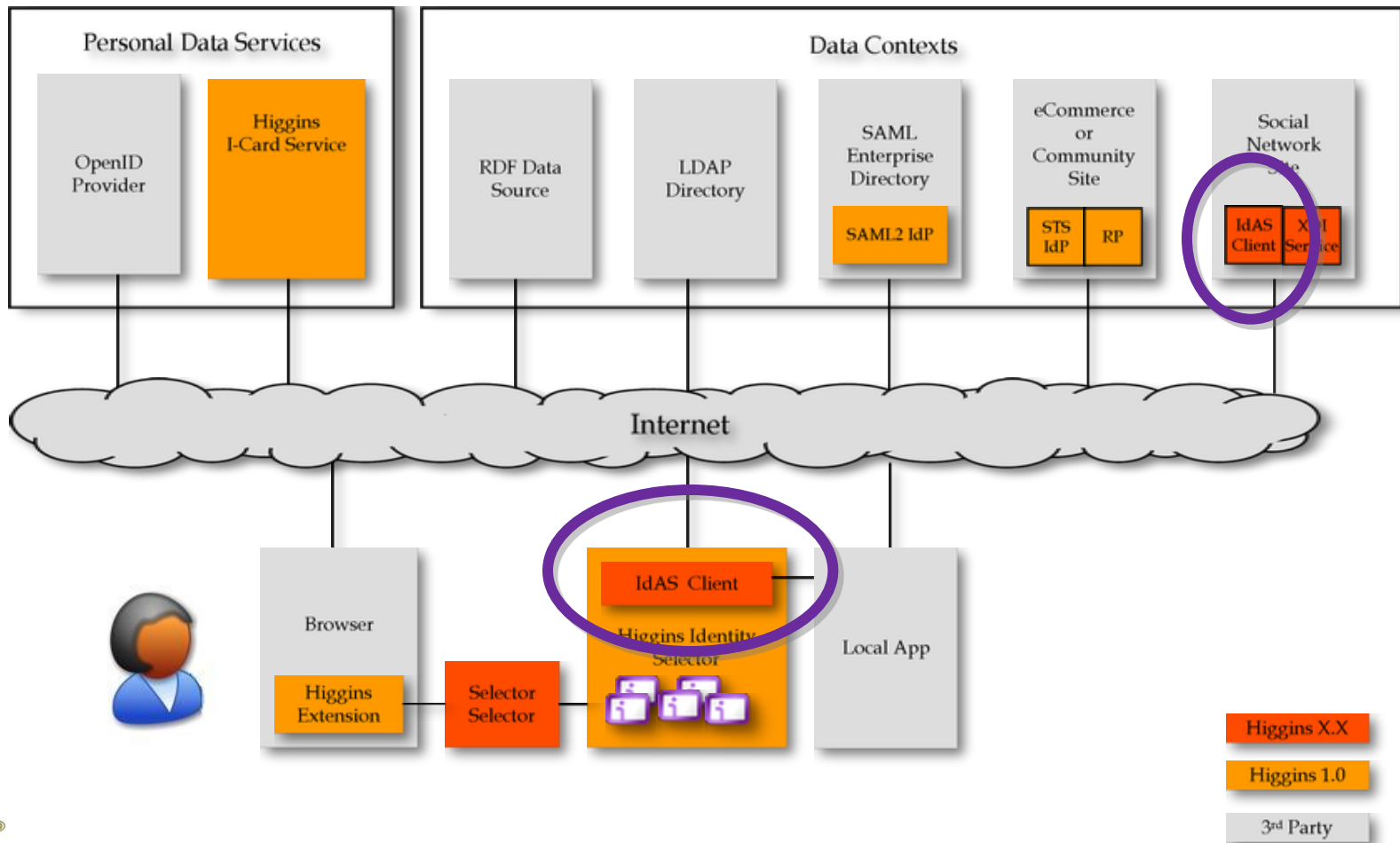


# ID-WSF Support (maybe)

- 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>



**Paul Trevithick**  
paul@socialphysics.org  
+1.617.513.7924



**Mary Ruddy**  
mary@socialphysics.org  
+1.617.290.8591



# 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)

