



KnowARC

The new web service oriented ARC

*Szalai Ferenc,
Independent industrial consultant :)*

Mission statement



KnowARC

”We are developing clever services”



Simple development environment required!
HED: Hosting environment (Daemon)

Why HED?



KnowARC

- ❖ Simple
- ❖ Flexible: modular (everything is a plugin) and extensible
- ❖ Multiple language bindings
- ❖ Dynamic SOAP parsing
- ❖ A lightweight solution
- ❖ Monolithic – easy to deploy
- ❖ Handling interoperability issues at the service level



Required for building

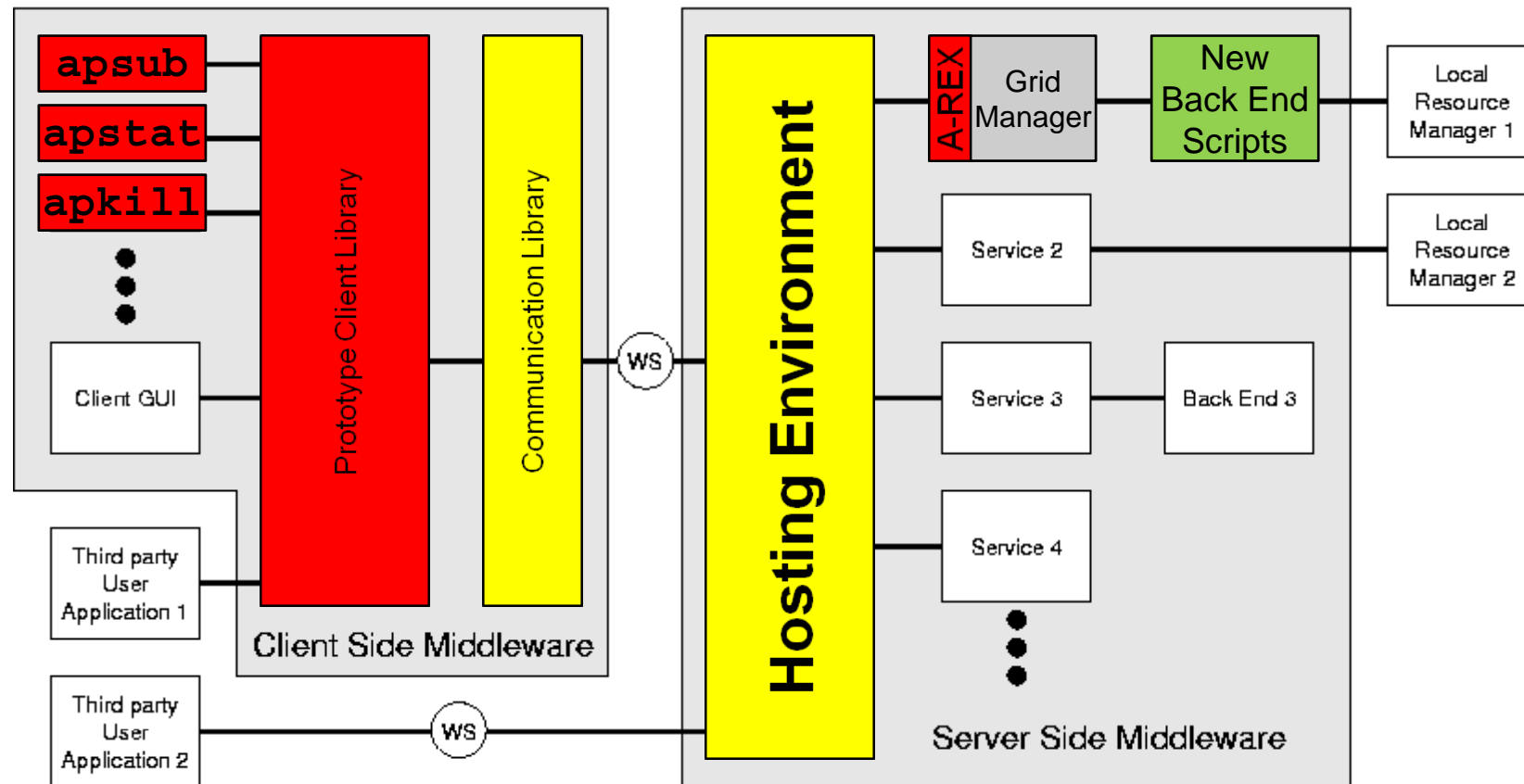
- glibmm
- libxml2
- openssl
- g++
- doxygen
- pkg-config
- automake
- autoconf
- libtool

Optional

- Swig
- Java SDK
 - ❖ For Java bindings
- Python-dev
 - ❖ For Python bindings
- gSOAP



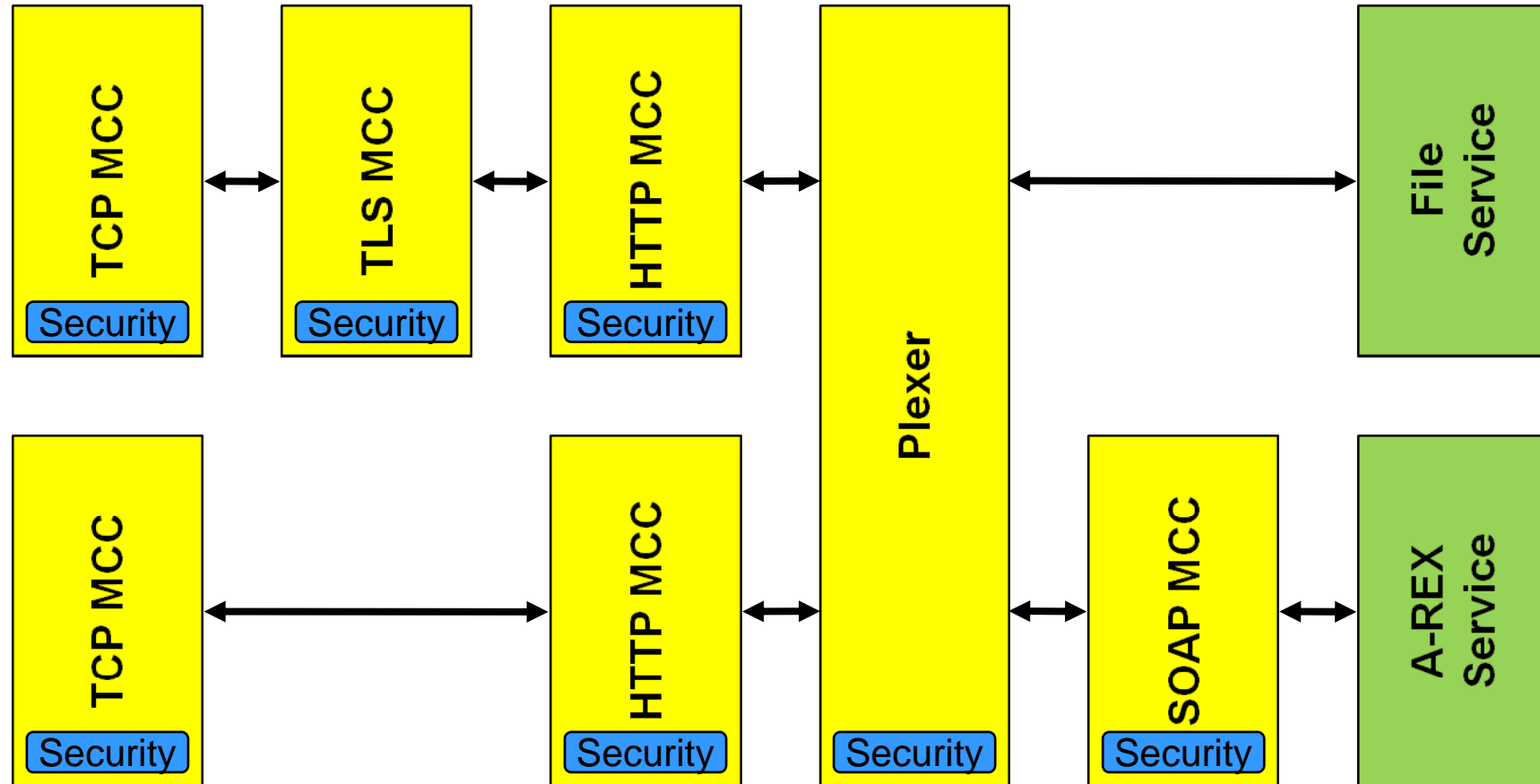
Architecture Overview



Internal Structure of the HED



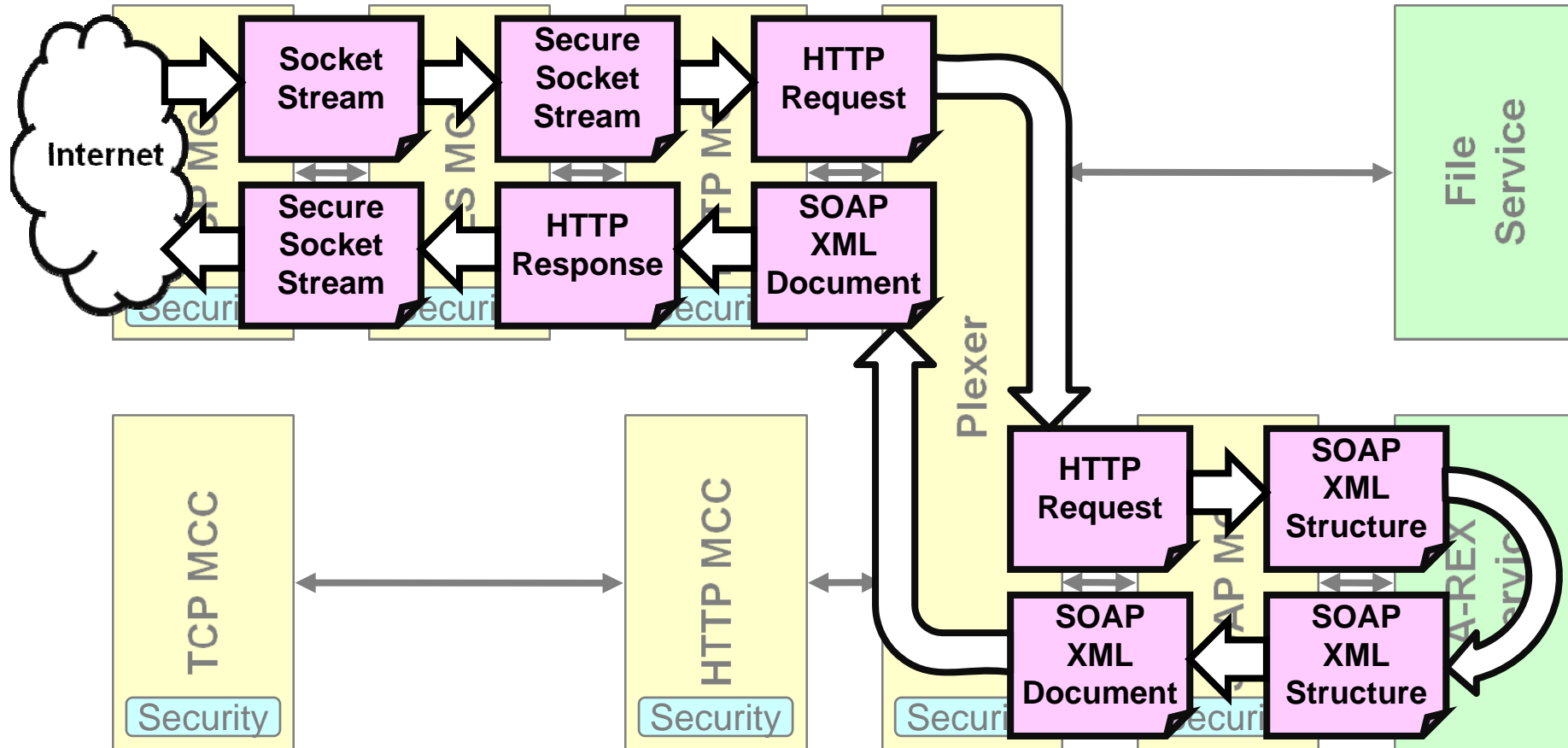
KnowARC



What is a Message?



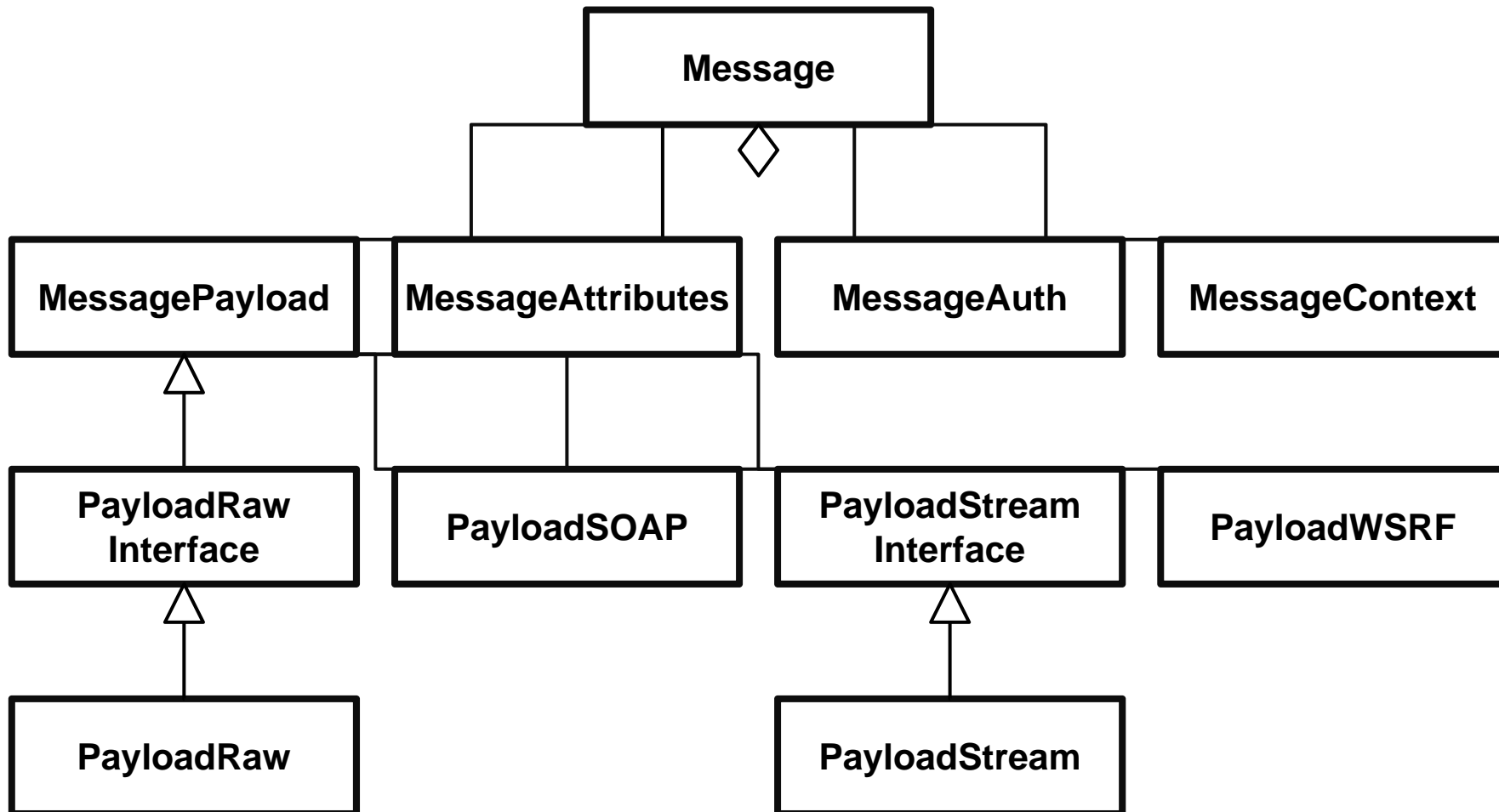
KnowARC



Message Details



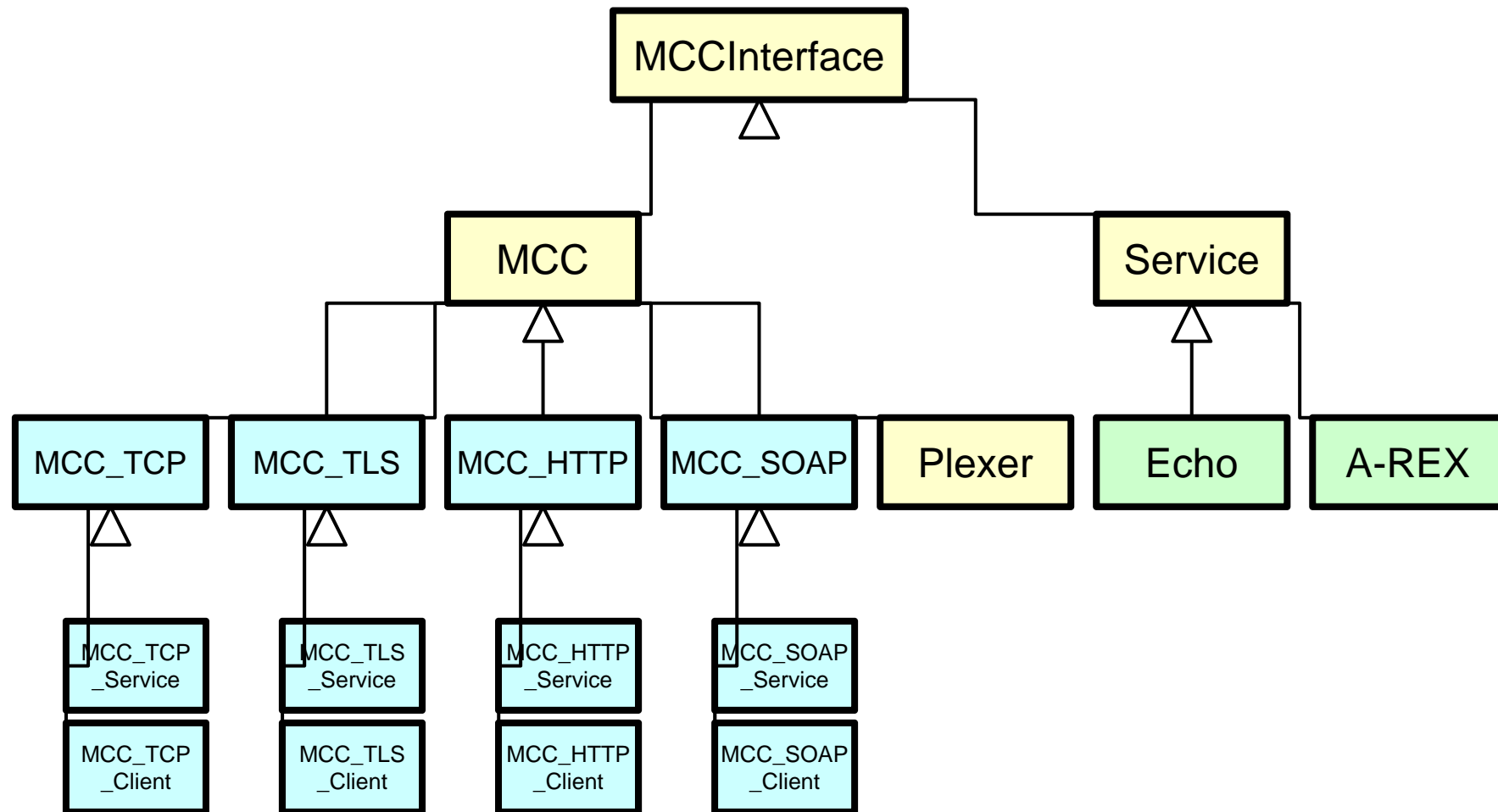
KnowARC



Message Chain Components



KnowARC





```
class MCCInterface {
```

```
    virtual Arc::MCC_Status process  
        (Arc::Message& request,  
         Arc::Message& response) = 0;
```

```
    virtual ~MCCInterface() {};
```

```
};
```

Common Purpose Libraries



KnowARC

- ❖ Manipulation of XML documents
- ❖ XPath queries
- ❖ Unified logging interface
- ❖ Configuration parsing
- ❖ Multi-threading
- ❖ Various data-type manipulations
- ❖ Resource accounting
- ❖ Partial support for WSRF

Grid related extensions



KnowARC

- ❖ Information System Register and cacheing components
- ❖ GLUE2 support everywhere
- ❖ Common delegation interface



- ✦ echo: doctor's horse
- ✦ A-REX: ARC Resource-coupled Execution service
 - ❖ Reusing old grid-manager as a functional backend
 - ❖ support of dynamics run-time environment
- ✦ Information Indexing Service (IIS not that one :) - p2p based



- Accounting and monitoring: MARS
- Storage System: Consistency is a MUST!
 - ❖ Distributed Metadata catalogue
 - ❖ Storage manager with data scheduling
 - ❖ Integration of 3rd party storage systems like SRM
- Job managers with intelligent brokering

Future Plans



KnowARC

- ❖ Production release in August 2008.
- ❖ A generic interface for back-ends.
- ❖ Extensible security modules (XACML).
- ❖ User-friendly configuration.
- ❖ Inter-service communication.
- ❖ Detailed user-centered documentation.

Conclusions



KnowARC

- ❖ The first prototype of HED is running!
- ❖ A solid basis for further development.
 - ❖ The HED itself.
 - ❖ MCCs for other protocols.
 - ❖ Services of various kinds.
- ❖ Soon available at www.knowarc.org.
 - ❖ Try it!