



Public Health Applications in Remote Sensing

Service Adoption Experience of the PHAIRS Project

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Overview

- Service Models
- PHAIRS Services
- Differential Adoption Experience
- Lessons Learned
- Conclusions



Service Models

- Representational State Transfer (REST)
- Simple Objects Access Protocol (SOAP)
- Open Geospatial Consortium
 - Web Map Service
 - Web Coverage Service



REST Services

- Based upon core HTTP requests
 - Get, Post, Update, Delete
- The submitted requests specify actions with or on *resources*
- The actions are *implicit* in the type of request
 - GET = read resource state
 - POST = create a resource
 - UPDATE = update and existing resource
 - DELETE = delete and existing resource
- HTTP headers are used to encode request/response metadata
- Argued to be simple to access for client developers



SOAP Services

- Part of a family of specifications that define a comprehensive collection of protocols for machine-to-machine communication
- Based upon an encapsulation of messages and other content within an XML document (envelope) that is often communicated over HTTP
- Designed to accommodate enterprise-scale service requirements and functionality, including specifications for messaging, metadata, management, business processes, transactions, and presentation.
- More comprehensive capabilities come at a cost of complexity in implementation.

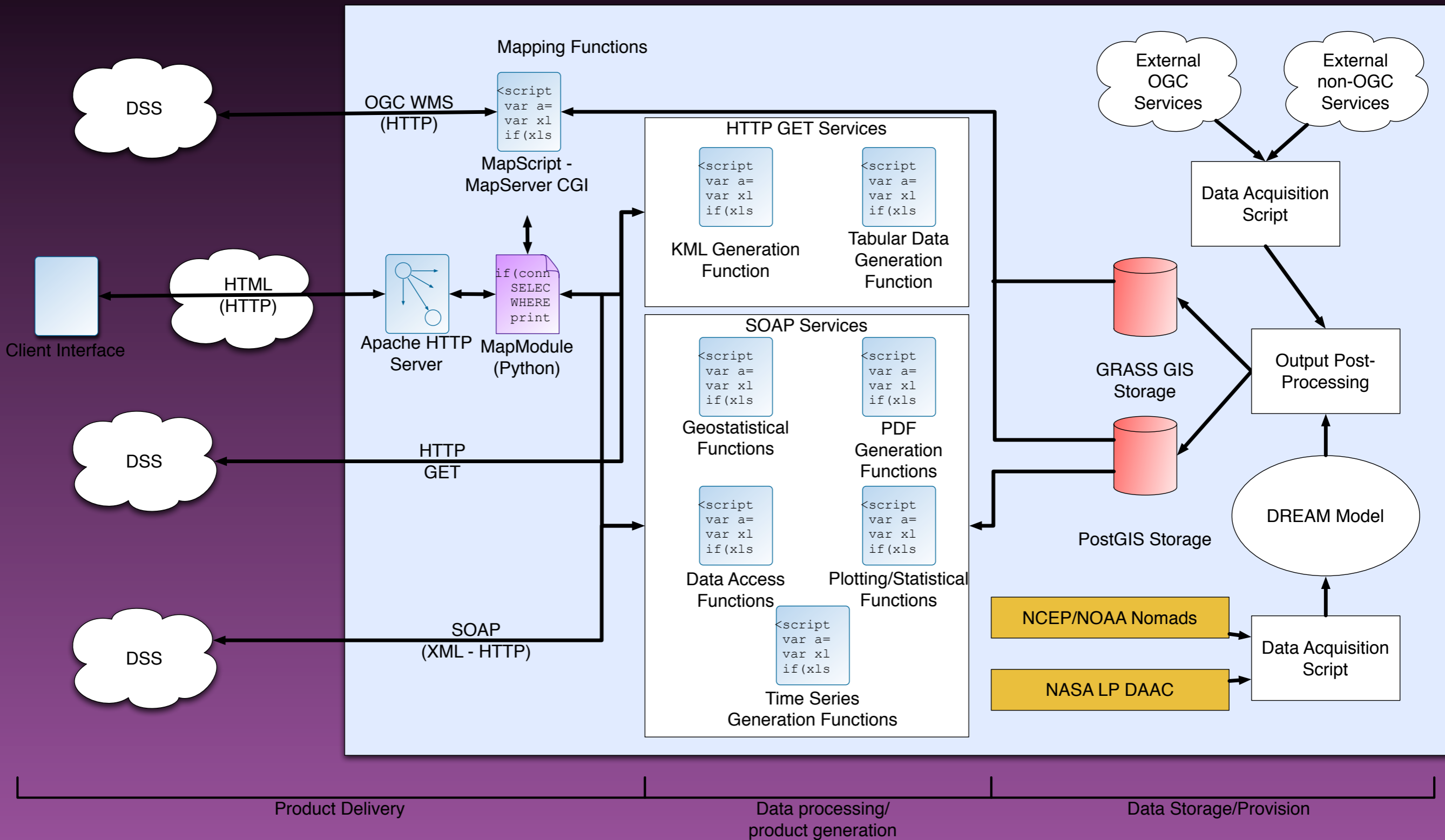


OGC Services

- Web Map Services (WMS) - HTTP-based request for a map image
 - Web Coverage Services (WCS) - HTTP-based request for geospatially referenced data
 - Support for Get requests is required, Post requests are optional
 - OGC WMS and WCS services *are not* strictly RESTful but *do* provide a simple URL interface that supports *read* access to a map or data resource
- ➡ A reasonable proxy for differential adoption of REST vs. SOAP services for the public health DSS developer community with which the PHAiRS project interacted

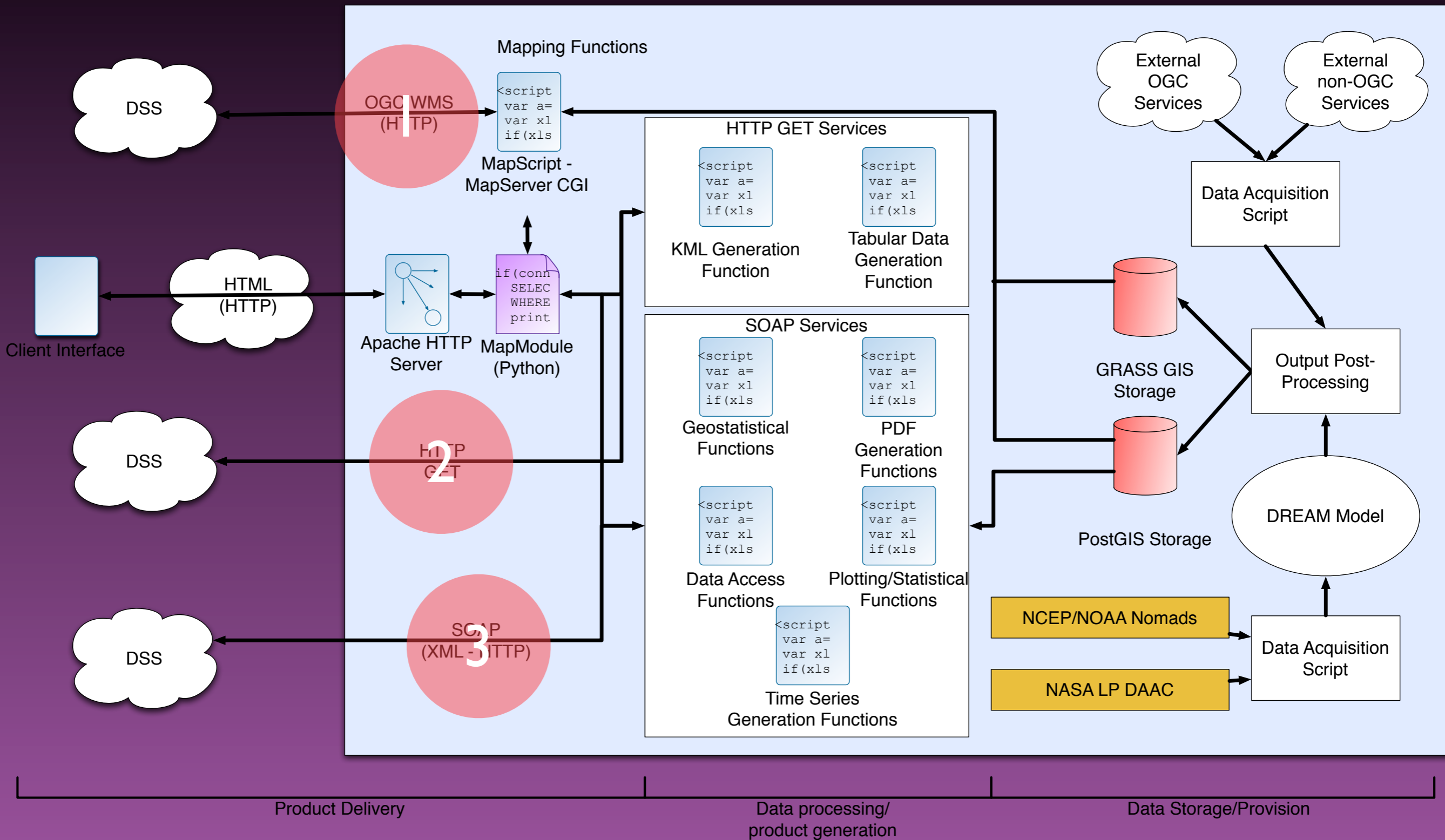


PHAIRS Services





Differential Adoption





Lessons Learned

- SOAP services provided a robust platform for developing the demonstration interfaces
- SOAP services provide a flexible framework for exposing complex processing capabilities
- External developers expressed a strong preference for the more basic OGC and HTTP Get interfaces deployed for use in external DSS
- The OGC and HTTP Get services were easily deployed into existing external clients (including Google Earth, R, SYRIS syndromic surveillance system).



Conclusions

- In the specific context of the PHAIRS project
 - SOAP provides a powerful model for component interaction within the system - making the development and reuse of system components easier
 - SOAP was more complex than the public health DSS developer community that we worked with was interested in developing with.
 - The public health DSS developers expressed no significant reluctance to the URL-based request model of the OGC and HTTP-Get services developed for the project



Discussion

- What experience have you had in adoption of your services?
- Have you seen differential adoption when your users have an alternative?
- How viable is a dual interface model?



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