K-Soap

In order to understand K-soap I feel it's important to look at Soap first of all.
SOAP is the simple object acess protocol and is an XML vocabulaty used to describe messaging and remote procedure calls between distributed components. SOAP has the benifits of flexibility benifitting from its foundations in XML its ubiquity thanks to HTTP as a primary transport mechanism. SOAP is basically an RPC* mechanism over HTTP for messages that are encoded in XML, similar to XML-RPC.

While both protocols can perform remote procedure calls in a similar way, SOAP is an attempt to pass objects between disparate systems.Web-services use SOAP to communicate; web services on mobile devices use a subset of SOAP, with a small footprint , called K-soap the k-soap classes that must be available to run web-services on a MIDP device can be provided by including the Ksoap-Midlet suite.

The java Web service implementation is based on Ksoap and Kxml, which are open-source implementations of Web services made to run on small mobile devices; this implementation supports a subset of the soap 1.2 specification. The reason for supporting only a subset of SOAP 1.2 are the limited amount of memory on these devices and the limited capabilities of the J2ME environnement.

The JVMs on mobile devices support development of applications based on the J2ME specification, and IBM's Websphere Studio Device Developer (WSDD) provides an IDE for development of J2ME-based applications. Support for development of applications using Web services has been integrated into WSDD. Using WSDD, a developer will be able to develop, deploy, and debug applications that use Web services on mobile devices.

The C-based Web service implementation is based on gSOAP, which containts a set of C routines for handling SOAP messages, and a stub compiler that automatically maps native and user-defined C to semantically equivalent SOAP data types. With gSOAP, SOAP interoperability is achieved with a simple API; this relieves the developer from the burden of SOAP details and enables the developer to concentrate on the application-essential logic.

Application development using C-vased Web service run timr environnement on palm is supported with Metrowerk's Code Warrior and GNU PRC-tools. CodeWarrior is the premiere C development environnement for Palm devices.

Ksoap and kxml are open-source implementations of Web services made to run on samlall mobile devices.

The ksoap toolkit

The ksoap project is based on kxml, a lightwieght pull parser designed specifically for use with MIDP. Enhydra, a provider of J2ME and J2EE solutions, hosts both kSOAP and kXML. Both toolkits are available through the Enhydra Public licence, and come packaged in a single JAR for use in a SOAP environnement -handy if the MIDlet needs to be parsse additional, non-SOAP-related XML.

One of kSOAP's biggest strenghts is it's relative simplicity. Most enterprise-level SOAP toolkits often rly on the use of a web services description langage (WSDL) generated proxy object to make function calls. This is useful if a service has a published description and when the toolkit requires the instamllation of several different client and transport objects. While kSoap dose'nt support WSDL, it does mame calling a service relatively painless. Only two objects are required: theSOAPObject and http-transport.

In addition, kSOAP makes it very easy to capture fault data. The toolkit maps all SOAP faults to an exception oblect known as SoapFault. In this manner, a fault can be caught and handled like any

other exception in the MIDIlet.

Ksoap2 and Kxml2

Ksoap2 is anew version of Ksoap, based on Kxml2.
Currently, every implementation detail including the Ksoap 2 Api may still change significantly. Also, the version available now has not really been tested.

Ksoap2 is a complete redeign, taking lessons learned from ksoap1.x into account

Some important changes are

Structure clean up
KSoap2 has improved support for litteral encoding
SOAP serialisation support is now optional and contained in a seperate package
Several seperate classes have been integreated into the class class SoapSerializationEnvelope, providing SOAP serization support.

*XML-RPC
XML-RPC is a spec and a set of implementations that allow software running on disparate operating systems, running in different environments to make procedure calls over the internet.

It's remote procedure calling using http as the transport and XML as the encoding.XML-RPC is designed to be as simple as possible, while allowing complex data structures to be transmitted, processed and returned.

WEB links

http://KXML.org/
http://kobjects.org/ksoap2

http://kxml.enhydra.org

http://kobjects.org/ksoap2/api/
Packages
org.ksoap2.samples.quotes
org.ksoap2.serialization
org.ksoap2.servlet
org.ksoap2.transport

All Classes

HttpTransport
KvmSerializable
Marshal
MarshalBase64
MarshalDate
MarshalHashtable
PropertyInfo
SoapEnvelope
SoapFault

SoapObject
SoapPrimitive
SoapSerializationEnvelope
SoapServlet
StockQuoteDemo

Java Developer's journal Mobile Web services with Ksoap.

http: / / sys-con.com/ java/ archivesa.cfm?volume=07&issue=10