



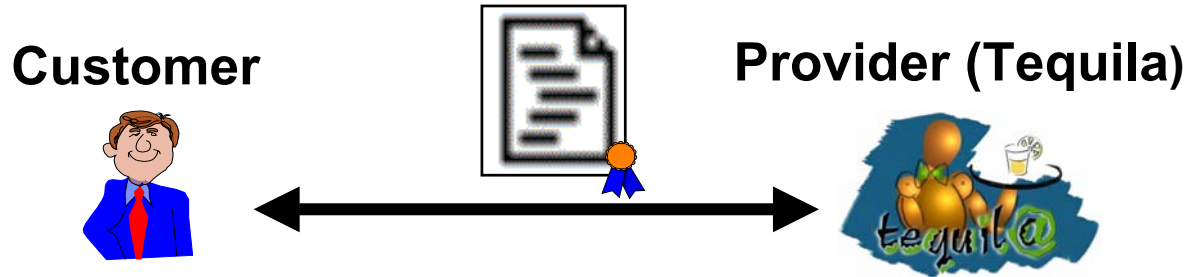
Service Negotiation Protocol (SrNP)

**Panos Georgatsos,
Algosystems S.A., Greece**

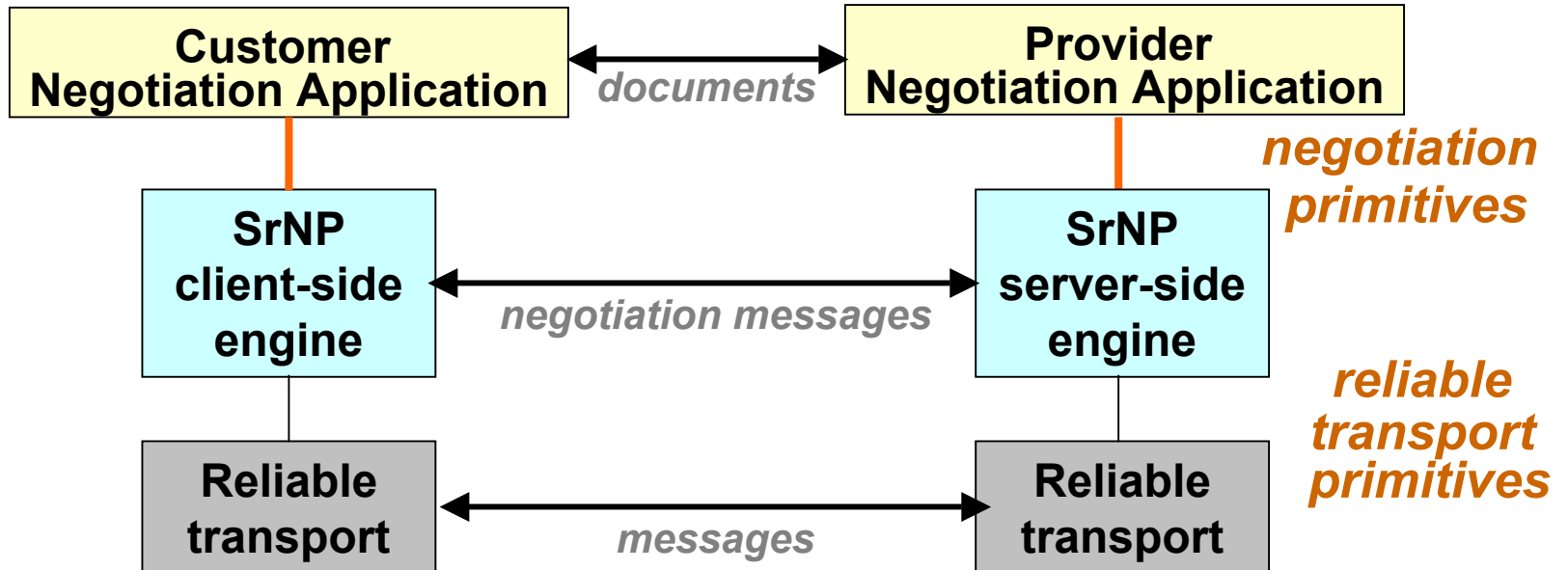
**Dimitris Giannakopoulos,
NTUA Greece**



Assumptions



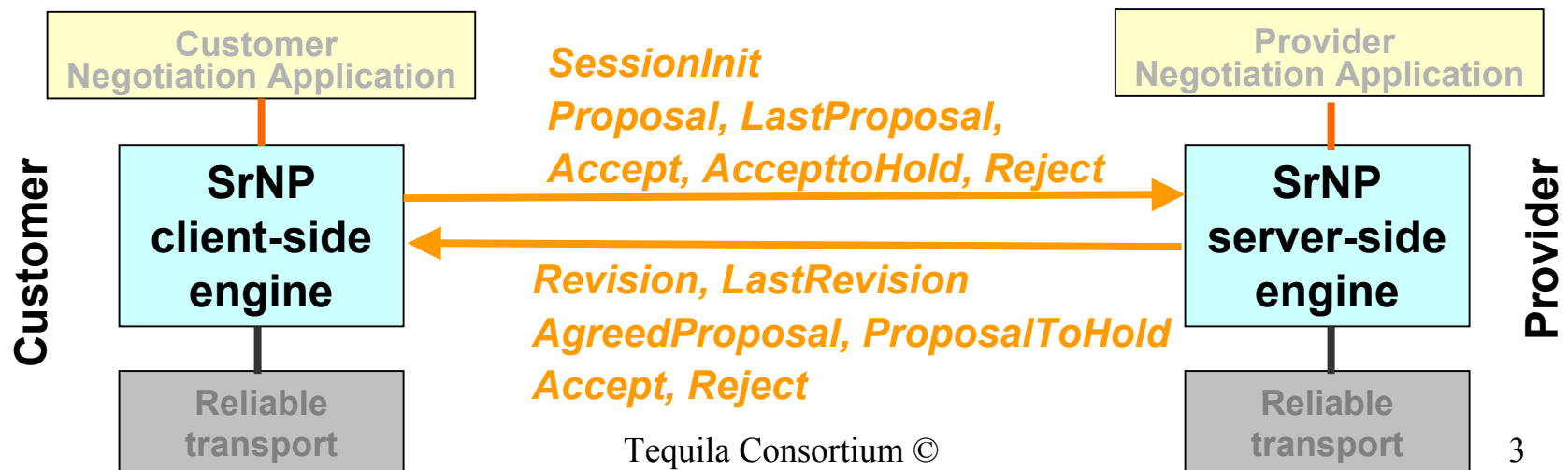
Document under negotiation is 'filled form' like
i.e. <attribute>-<value> pairs (e.g. TEQUILA SLS)





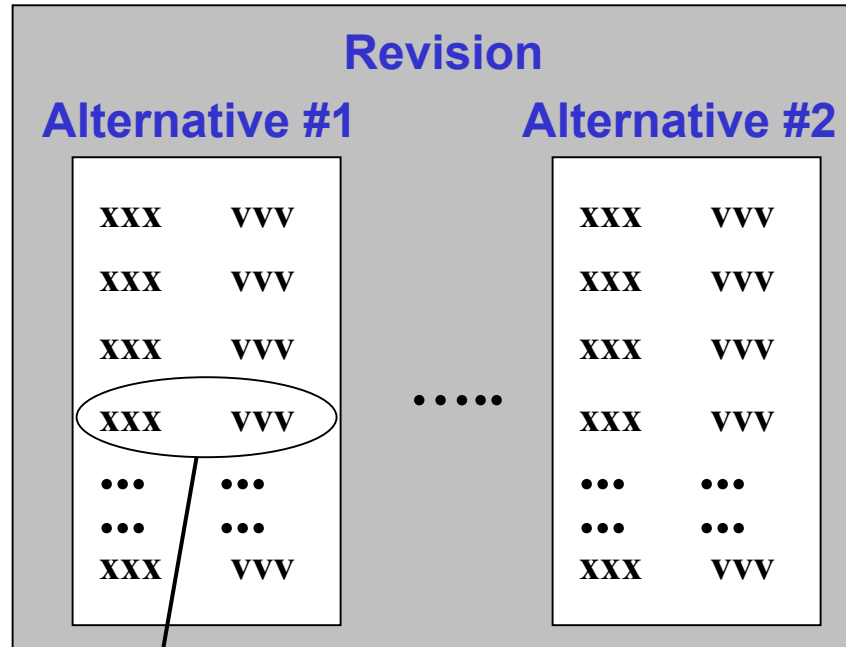
Features

- Client-server, session oriented, dialogue based, client initiated
- Client sends proposals, server responds with revisions
- ‘Take it or leave it’ and ‘Please wait’ features
- Server always calls for an agreement
- Each party can always turn down other party
- Documents’ semantics/format/syntax are transparent





Modeling Revisions



Alternatives are meant to be taken exclusively

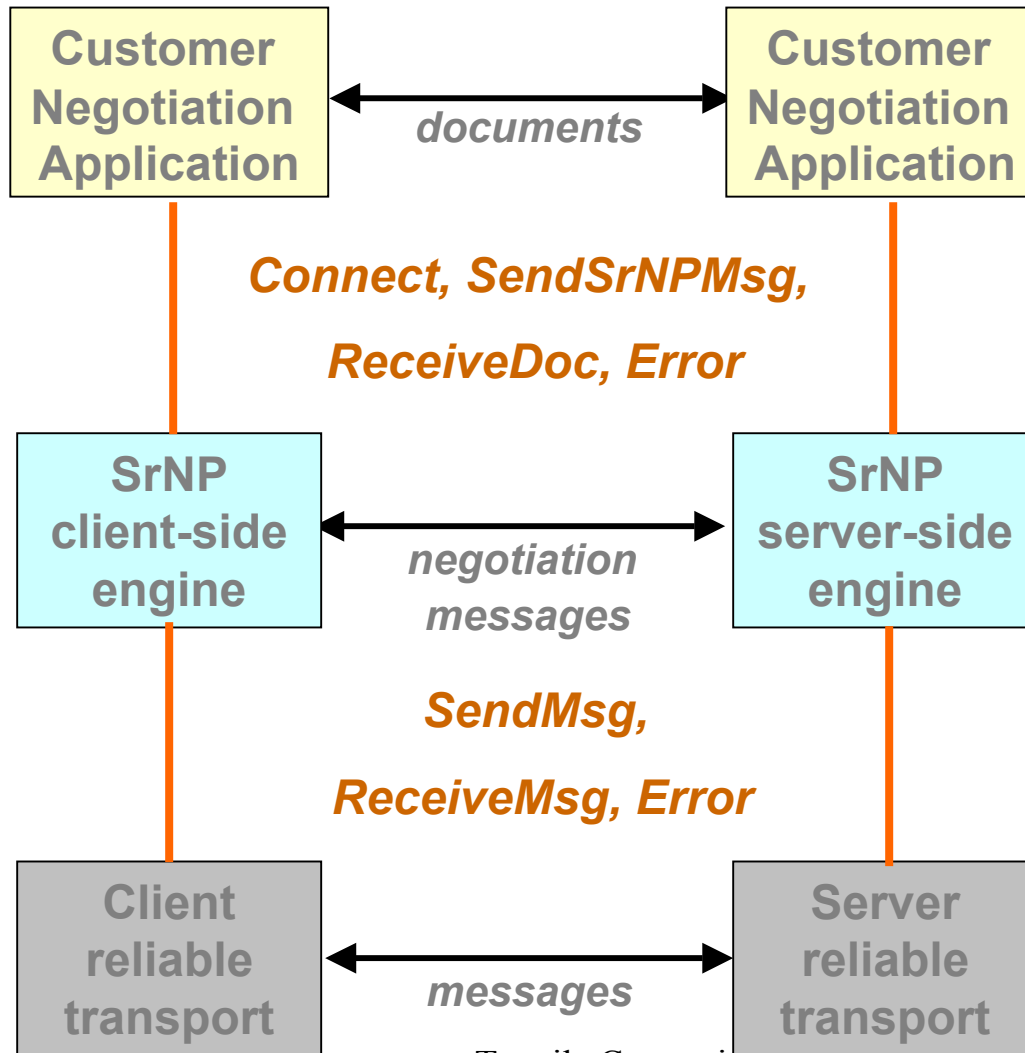
Guideline

ReviseAttribute: attribute

ProposedValue: [$>$, $<$, $=$] [value range]



Architecture



XML used for modeling negotiation documents and SrNP messages

SrNP API to application in Java

Transport API to SrNP engine in Java

Transport realized over TCP and HTTP stacks

negotiation primitives

Connect, SendSrNPMsg, ReceiveDoc, Error

reliable transport primitives

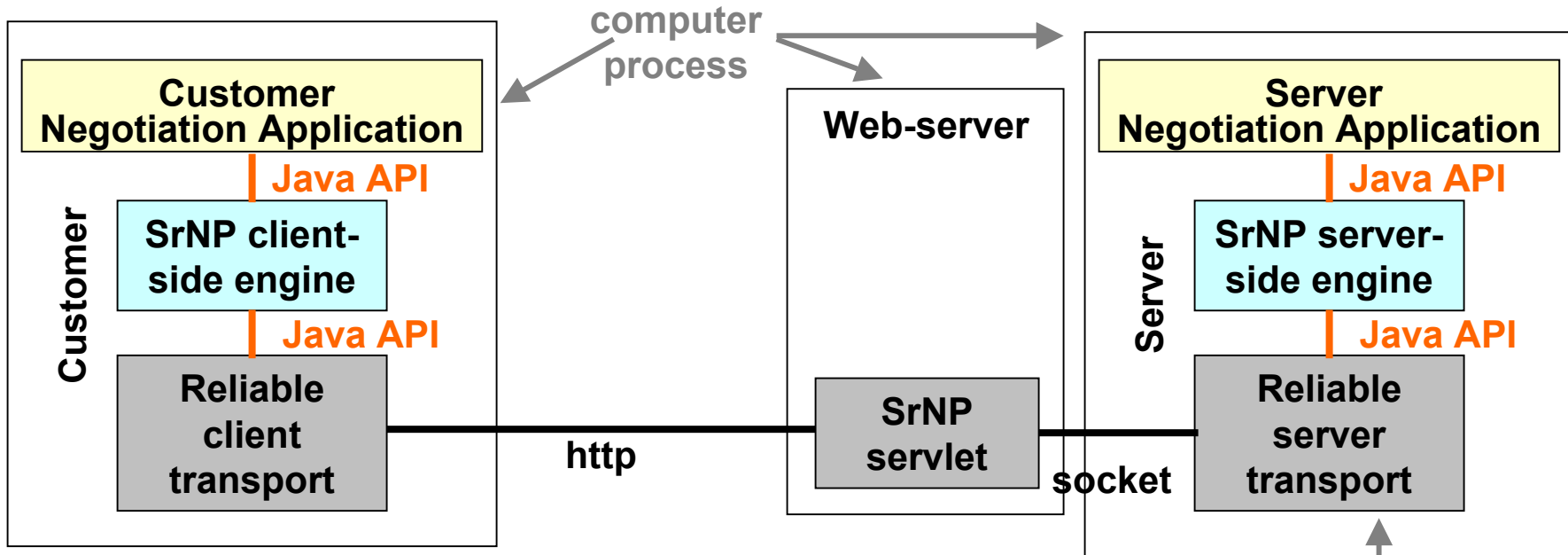
SendMsg, ReceiveMsg, Error



Deployment

N Customer Locations

SP Location



Stand-alone application
or
an applet

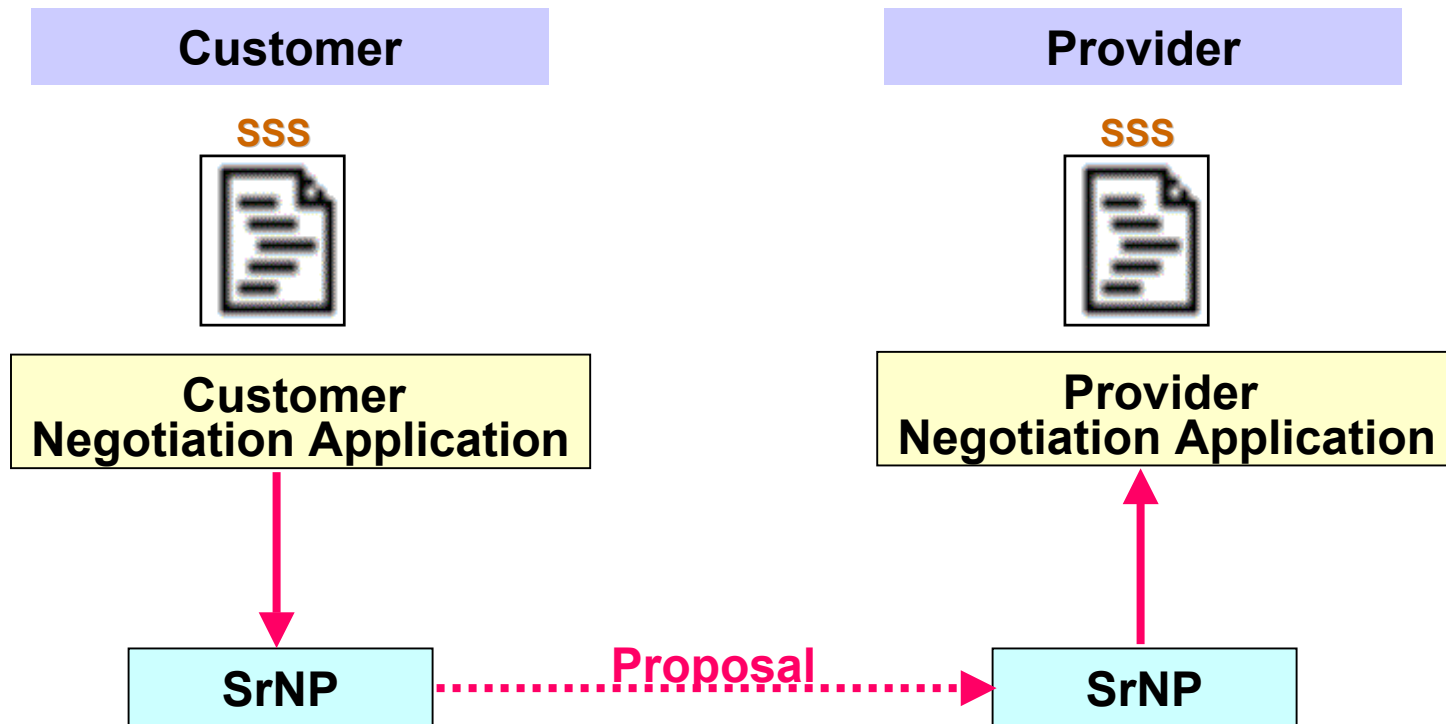
Stand-alone application
or
a 'bean' in an application server



- **Mutual Understanding Agreement**
 - **Customer complies with Provider's revisions**



Customer Constructs an SSS





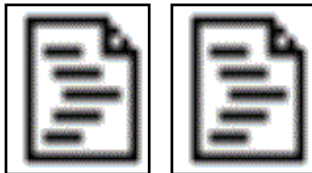
Provider Revise SSS

Customer

Provider

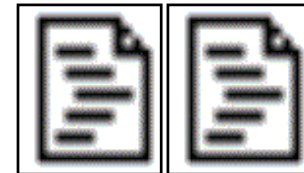
Check the resources requested against what can be provided

SSS RevisedSSS



If all can be satisfied accept; else try to propose alternatives based on the available resources

SSS Revisions



I, {E}

B, {QoS}

B, {QoS}

B, {QoS}

B, {QoS}

Customer Negotiation Application

Provider Negotiation Application

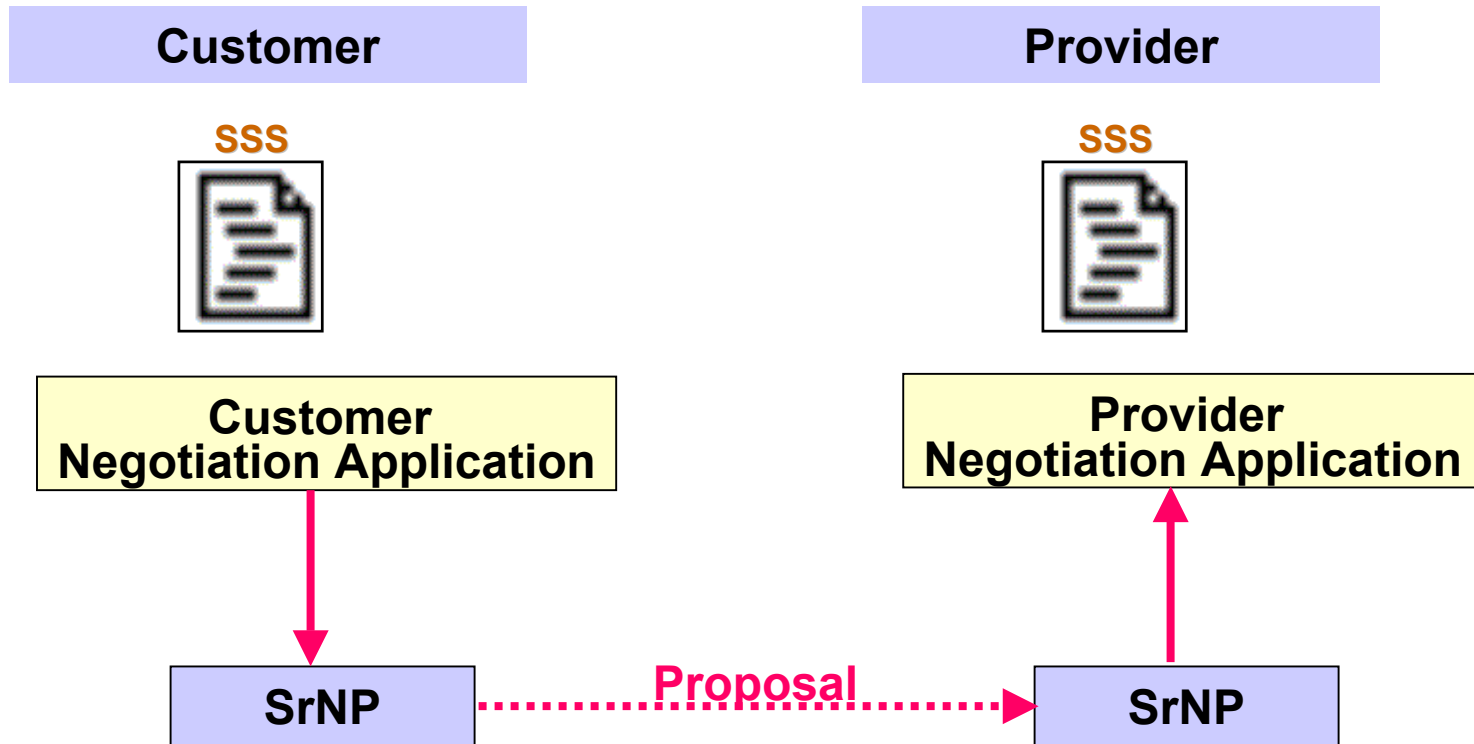
SrNP

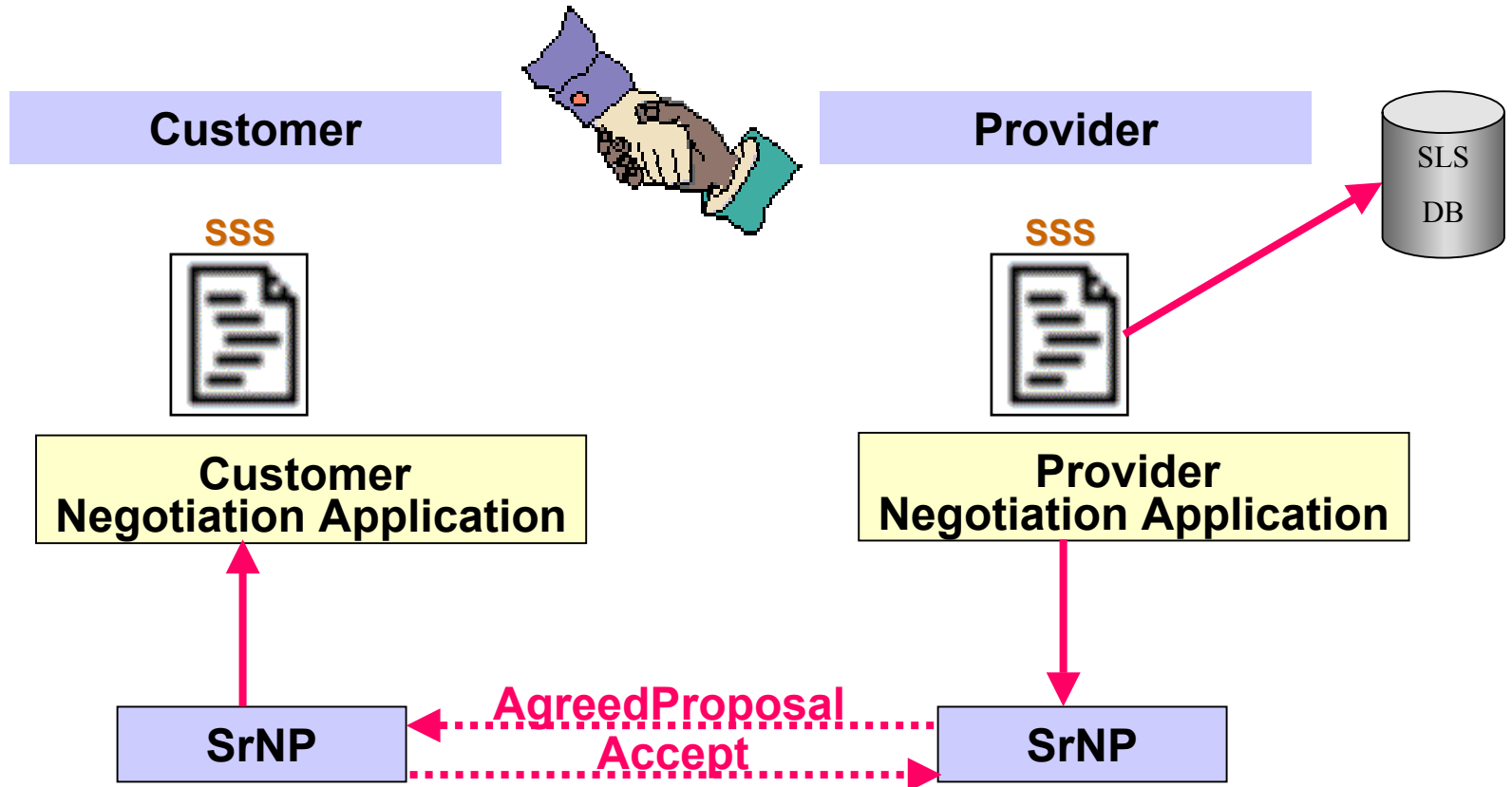
SrNP

Revision



Customer Accepts Revisions







- **Forced Agreement**
 - **2a:** Customer issues a 'take it or leave it' proposal and Provider accepts
 - **2b:** Provider issues a 'take it or leave it' revision and Customer accepts



- **No Agreement**
 - **3a: Customer turns down Provider's revisions**
 - **3b: Provider turns down Customer's revised proposals**



- **Abnormal Termination**
 - **4a: Out-of-date response**
 - **4b: Unexpected application behavior**
 - **4c: Transport error**