



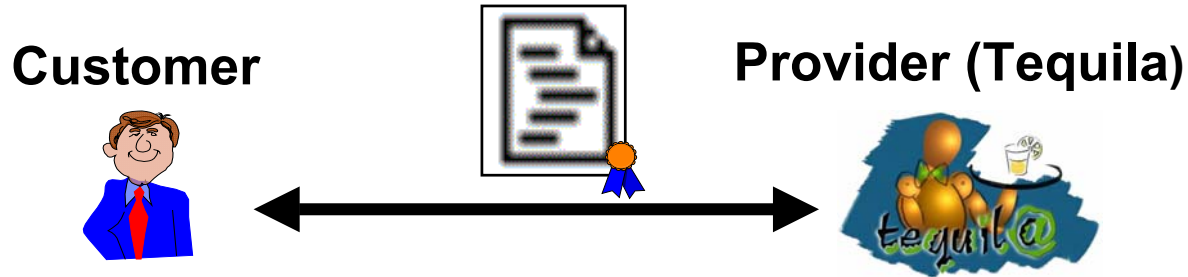
# Service Negotiation Protocol (SrNP)

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

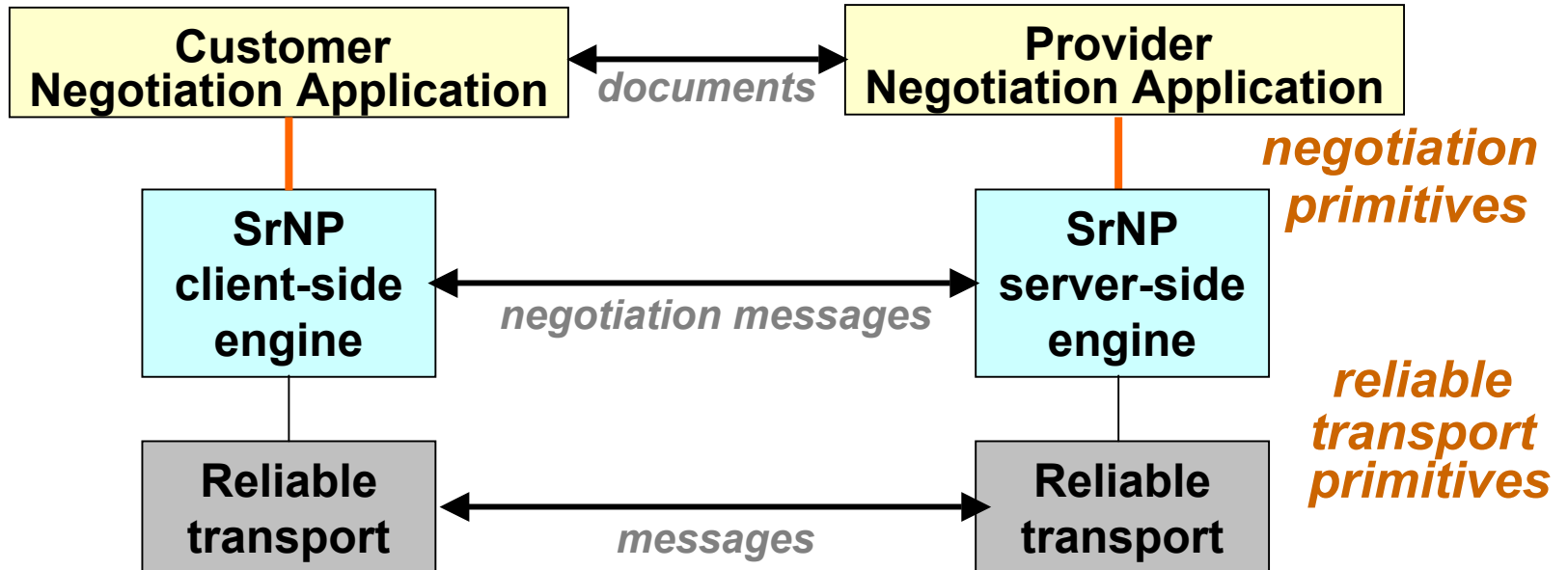
**Dimitris Giannakopoulos,  
NTUA Greece**



# Assumptions



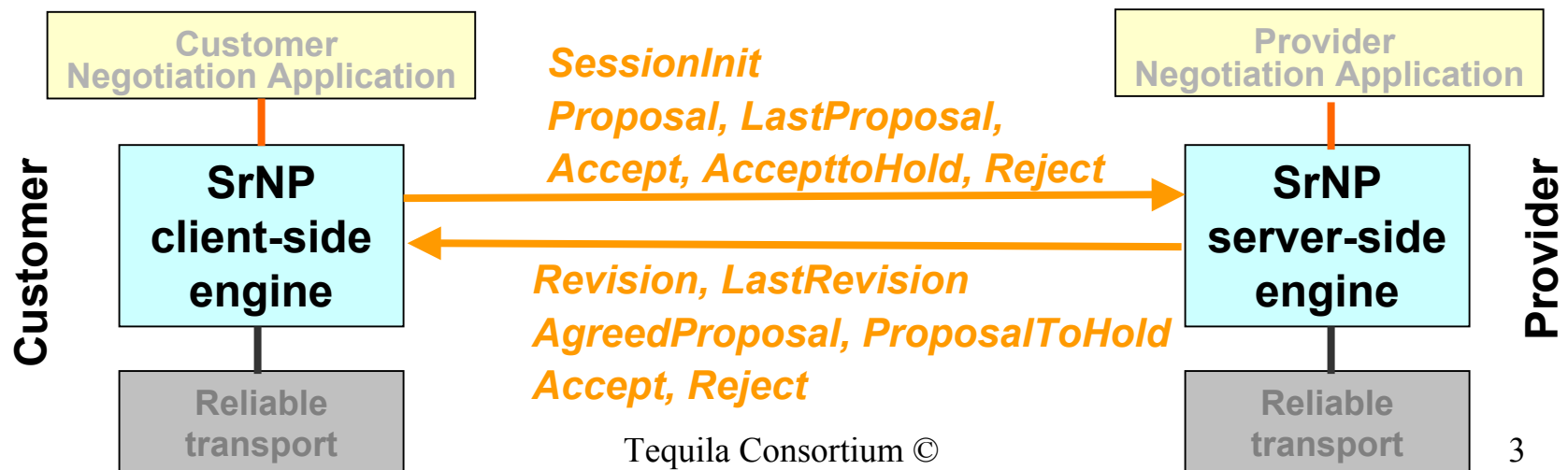
Document under negotiation is 'filled form' like  
i.e. <attribute>-<value> pairs (e.g. TEQUILA SLS)





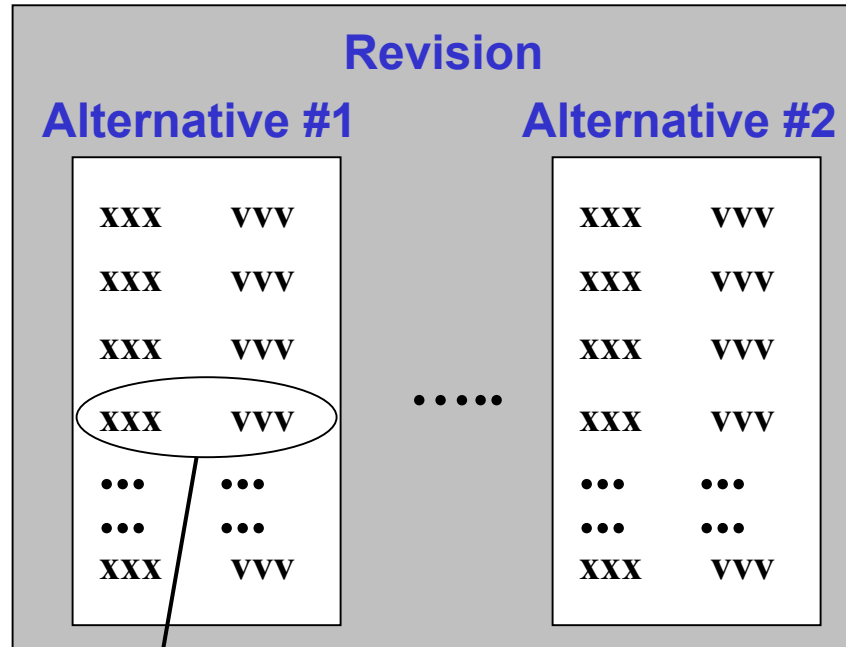
# Features

- 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**

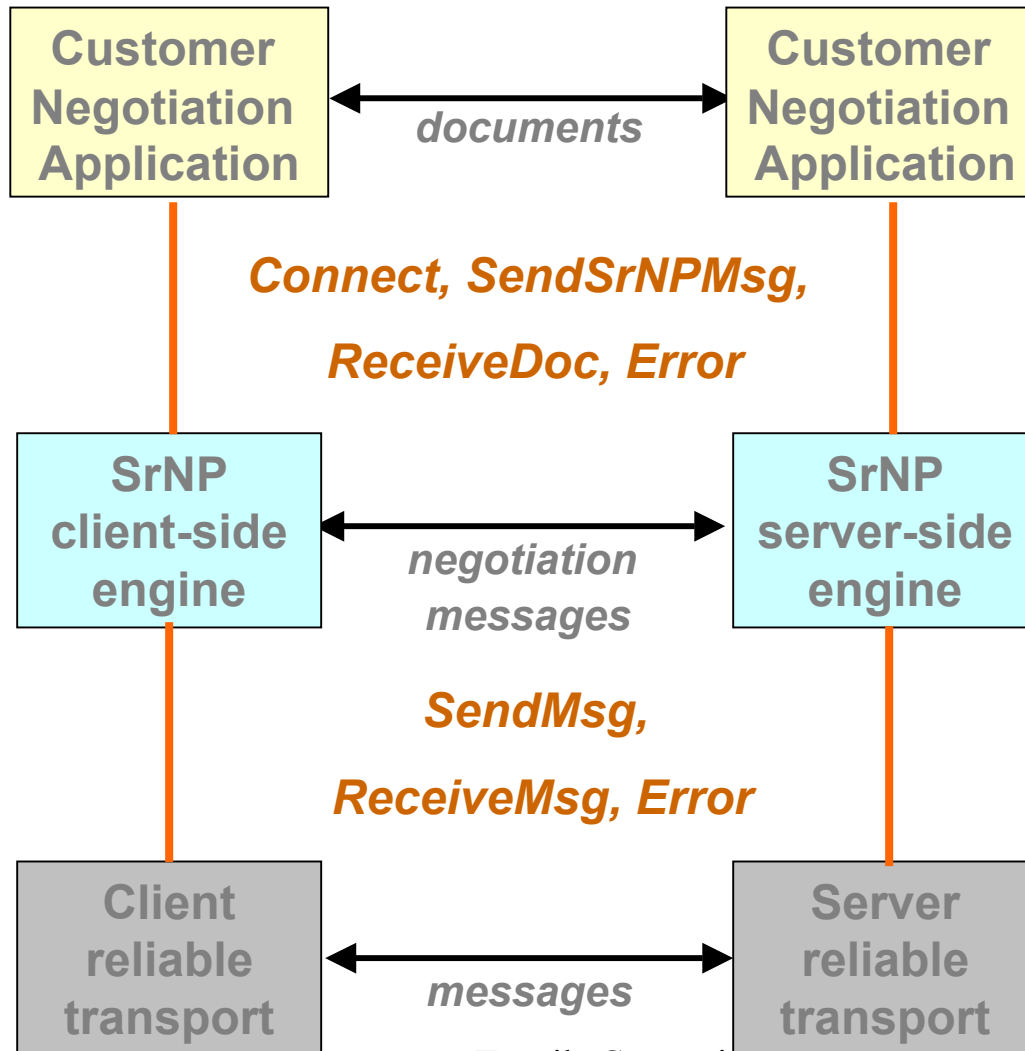
## Guideline

**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*

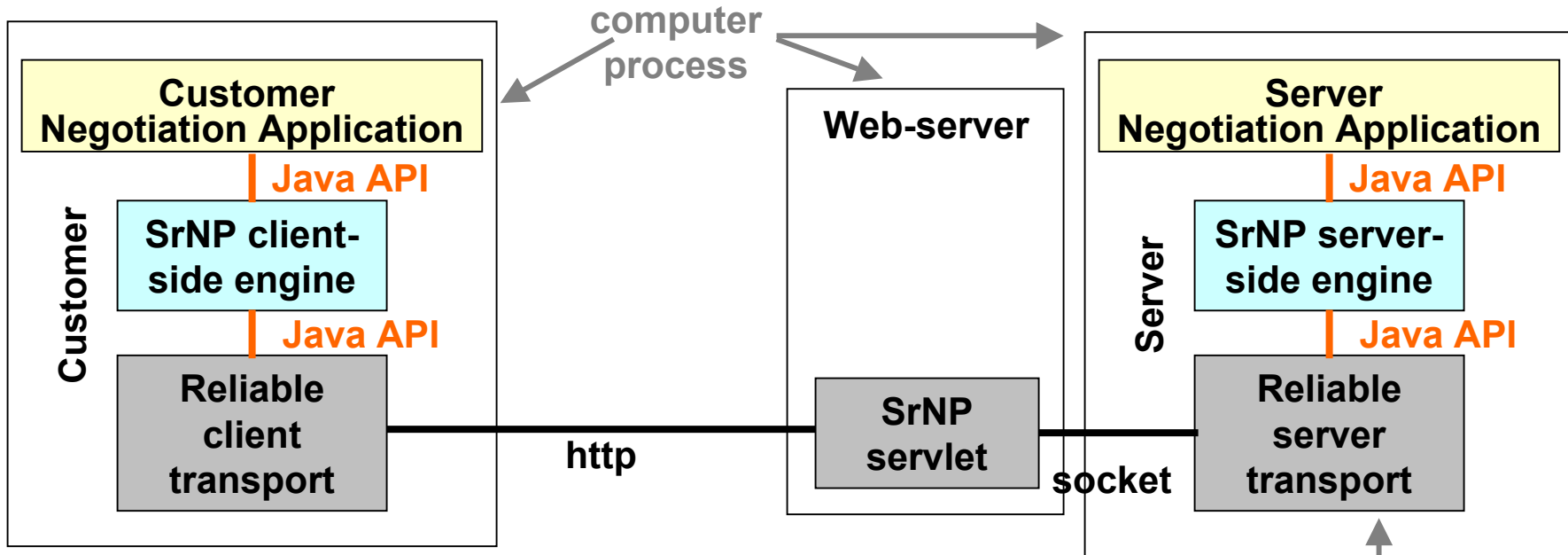
*SendMsg, ReceiveMsg, Error*



# Deployment

## N Customer Locations

## SP Location



Stand-alone application  
or  
an applet

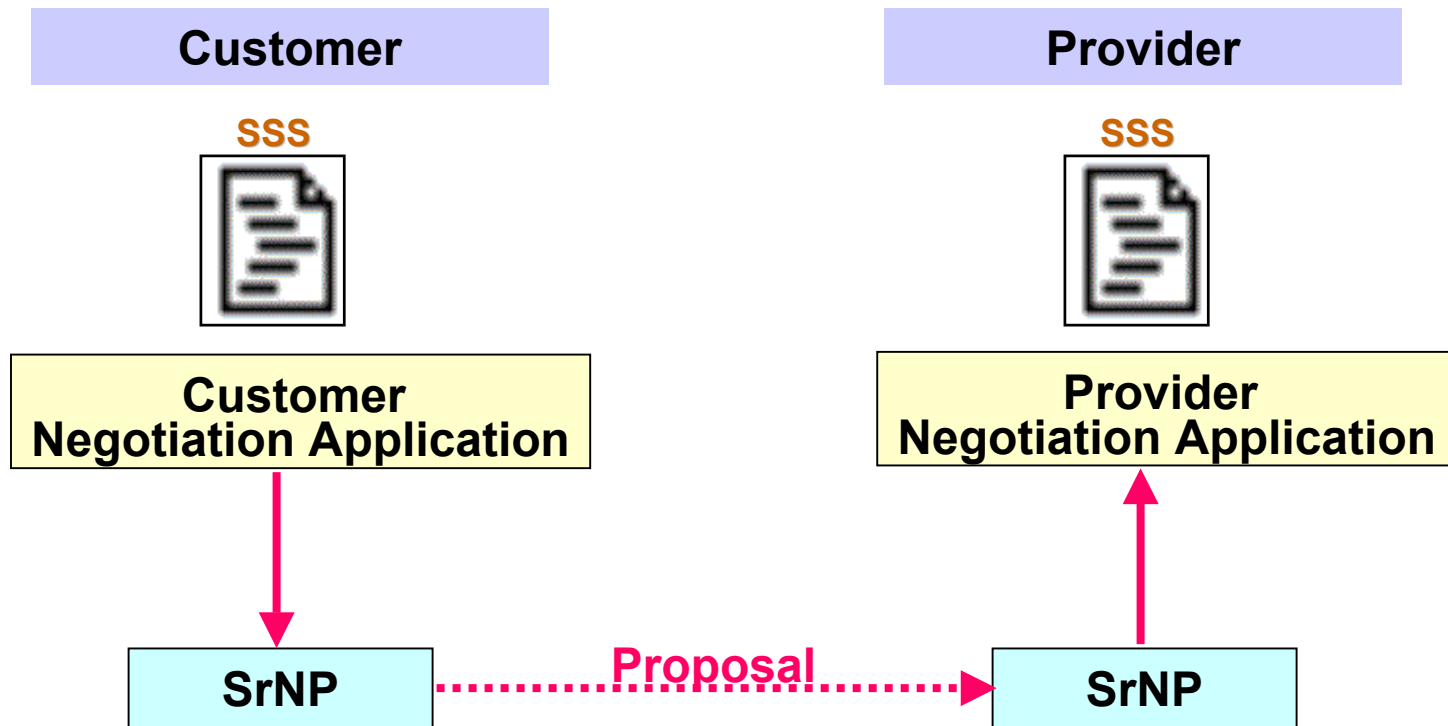
Stand-alone application  
or  
a 'bean' in an application server



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



# Customer Constructs an SSS



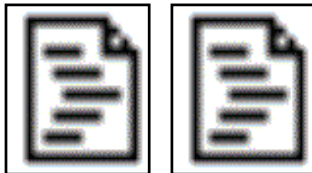


Customer

Provider

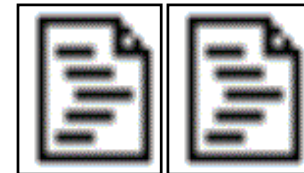
Check the resources requested against what can be provided

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

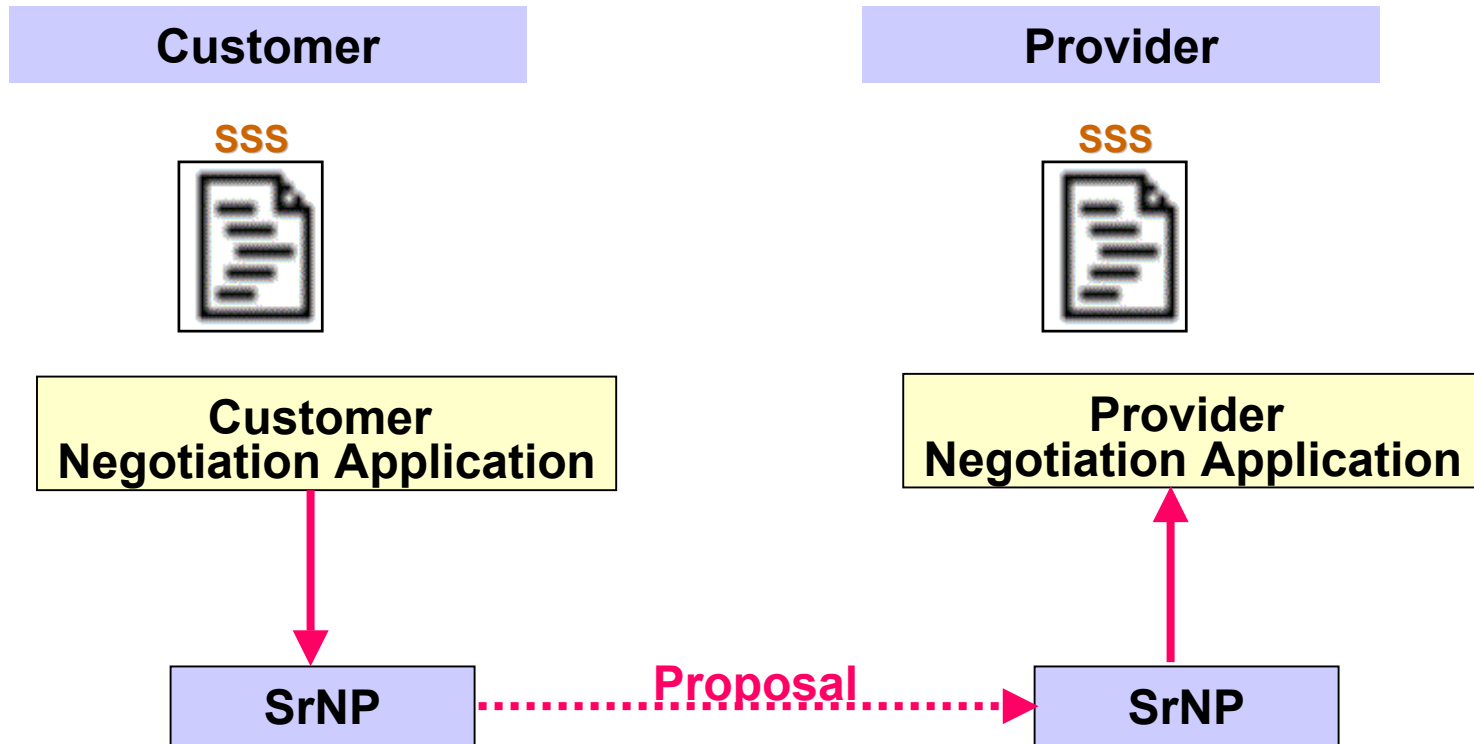
SrNP

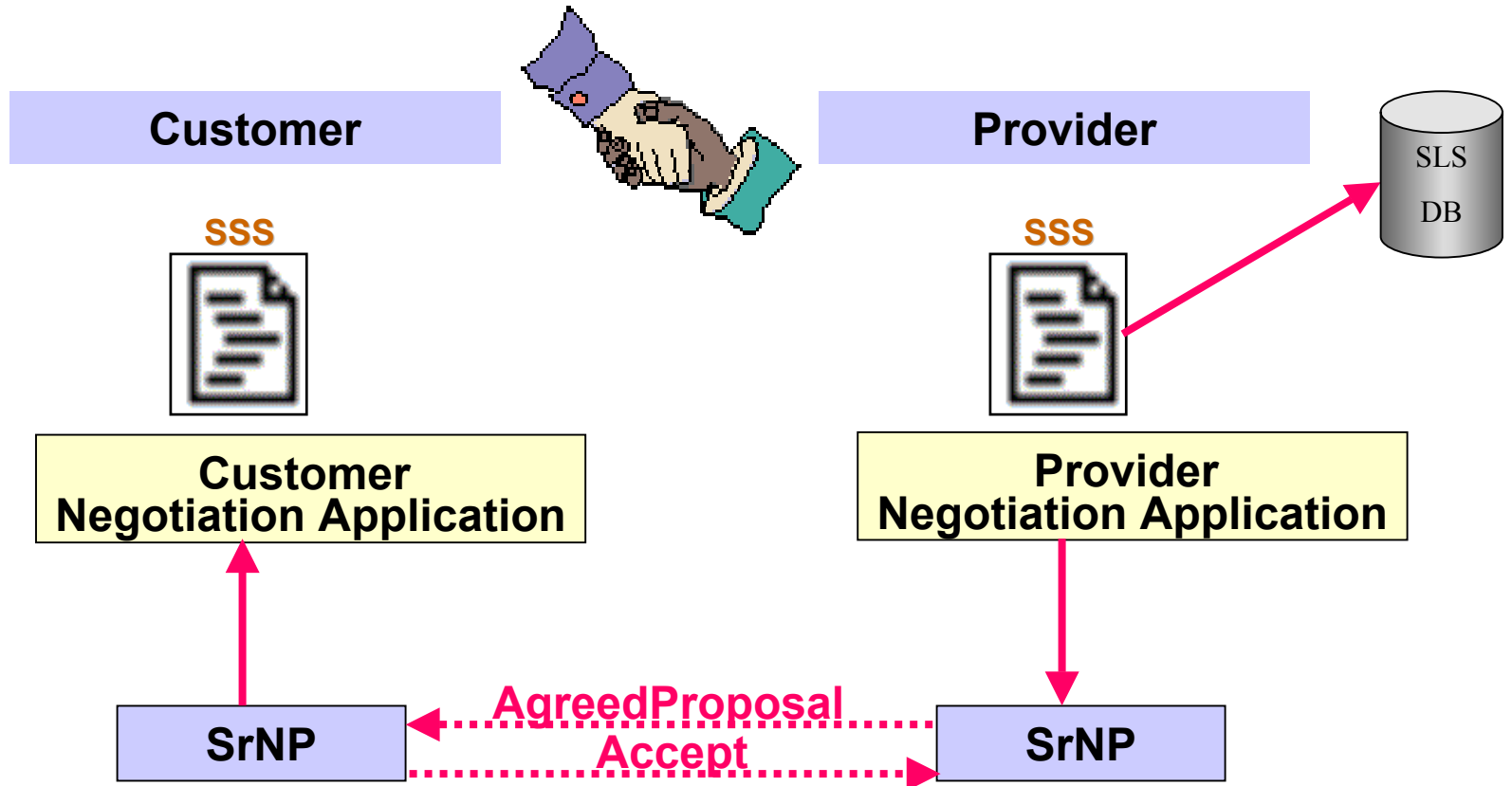
SrNP

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**