

# **Service Level Agreements (SLA)**

# Clarifying the Concept

# Definition

- An SLA is a negotiated agreement designed to create a common understanding about services, priorities and responsibilities.
- Between the service providers and their customers

# The starting point

- SLA can be:
  - A communications tool. The value of an agreement is not just in the final product; the very process of establishing an SLA helps to open up communications.
  - A conflict-prevention tool. An agreement helps to avoid disputes by providing a shared understanding of needs and priorities. And if conflicts do occur, they tend to be resolved more readily.
  - A living document. This is one of its most important benefits. The agreement isn't a dead-end document consigned to the Forget Forever file. On a predetermined frequency, the parties to the SLA review the agreement to assess service adequacy and negotiate adjustments.
  - An objective basis for measuring service effectiveness. An SLA ensures that both parties use the same criteria to evaluate service quality.

# Elements of the SLA

- To be effective, a service level agreement must incorporate two sets of elements:
  - service elements; and
  - management elements.

# Service elements

- The service elements clarify services by communicating such things as:
  - the services provided (and perhaps certain services not provided, if customers might reasonably assume the availability of such services)
  - conditions of service availability
  - service standards, such as the timeframes within which services will be provided
  - the responsibilities of both parties
  - cost vs. service tradeoffs
  - escalation procedures

# Management elements

- The management elements focus on such things as:
  - how service effectiveness will be tracked
  - how information about service effectiveness will be reported and addressed
  - how service-related disagreements will be resolved
  - how the parties will review and revise the agreement

# SLAs in Iran



# regulatory framework of Iran

- Regulatory Commission
  - Establishing all the ratifications in the field of ICT
- Three different ratification about SLA
  - **Communication Links**
  - **WiMAX**
  - **Data Links**

# Communication links

- Definitions:
  - Links in the infrastructure Network of the country
  - Transitional links between the different provinces of Iran
- Providers:
  - The Infrastructure Company of Iran
  - The Telecommunications Company of Iran
- The parties:
  - SLA should be signed between these two companies and the other operators

# Communication links

- Service Elements:
  - Availability
  
- Four types of services with different tariffs related to the QoS
  - Bronze
  - Silver
  - Gold
  - Diamond

# Communication links

Service name	Availability	Tariff
Bronze	99%	A
Silver	99.4%	2A
Gold	99.9%	3A
Diamond	99.99%	5A

# Communication links

- Management Elements:
  - UnAvailability
- K : coefficient of the unavailability of the service

# Communication links

Table of penalties for Bronze , Silver and Gold services

coefficient of the unavailability	Penalty
$0 < K \leq 1$	5%
$1 < K \leq 2$	10%
$2 < K \leq 3$	20%
$3 < K \leq 5$	35%
$5 < K \leq 10$	50%
$10 < K$	100%

# Communication links

Table of penalties for Diamond service

coefficient of the unavailability	Penalty
$0 < K \leq 1$	5%
$1 < K \leq 2$	10%
$2 < K \leq 3$	20%
$3 < K \leq 5$	35%
$5 < K \leq 10$	50%
$10 < K \leq 15$	60%
$15 < K \leq 25$	80%
$25 < K$	100%

# Internet via WiMAX

- One of the basic services over WiMAX: providing the Internet to the end users
- Providers:
  - Irancell
  - Mobin Net
  - Rayaneh Danesh
  - Isfahan
- The parties:
  - SLA should be signed between these four operators and the end users



# Internet via WiMAX

- Service Elements:
  - Latency
  - Availability
  - Packet loss
- Minimum requirements for these elements

Service Element	Measures
Latency	La < 500 ms
Availability	Av > 98%
Packet loss	PL < 2%

# Internet via WiMAX

Table of penalties

Service Element	Measures	Penalty
Latency	$500 \text{ ms} \leq La < 750 \text{ ms}$	5%
	$750 \text{ ms} \leq La < 1 \text{ s}$	10%
	$1 \text{ s} \leq La < 5 \text{ s}$	20%
	$5 \text{ s} \leq La$	100%
Availability	$95\% < Av \leq 98\%$	5%
	$90\% < Av \leq 95\%$	10%
	$80\% < Av \leq 90\%$	15%
	$Av \leq 80\%$	100%
Packet loss	$2\% \leq PL < 4\%$	5%
	$4\% \leq PL < 8\%$	10%
	$8\% \leq PL < 20\%$	15%
	$20\% \leq PL$	100%

# IP links

- Definitions:
  - All the IP based links
- Providers:
- The parties:
  - SLA should be signed between all the providers and their customers

# IP links

- Service Elements:
  - Availability
  - Packet Loss
  - Latency
  - Committed Information Rate
  - Mean Time to Restore or Repair
- **coefficient of the Access (K)** : calculated based on these parameters
- Four types of services with different tariffs related to the “K”
  - Bronze
  - Silver
  - Gold
  - Diamond

# IP links

K : coefficient of the access

Service name	Availability	Tariff
Bronze	98%	A
Silver	99%	2A
Gold	99.5%	3A
Diamond	99.9%	5A

# IP links

Table of penalties for Bronze , Silver and Gold services

coefficient of the unavailability	Penalty
$0 < K \leq 1$	5%
$1 < K \leq 2$	10%
$2 < K \leq 3$	20%
$3 < K \leq 5$	35%
$5 < K \leq 10$	50%
$10 < K$	100%

# IP links

Table of penalties for Diamond service

coefficient of the unavailability	Penalty
$0 < K \leq 1$	5%
$1 < K \leq 2$	10%
$2 < K \leq 3$	20%
$3 < K \leq 5$	35%
$5 < K \leq 10$	50%
$10 < K \leq 15$	60%
$15 < K \leq 25$	80%
$25 < K$	100%

# Considerations

- SLAs are alive documents
  - defined the date for the ratified SLAs to be revised
- In all the circumstances the Communications Regulatory Authority shall have sole jurisdiction to hear and resolve any disputes between the parties concerning the Service Level agreements.