



CoreGRID Industrial Conference

SLA Management and Reputation in a Dynamic Virtual Organisation

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European Commission

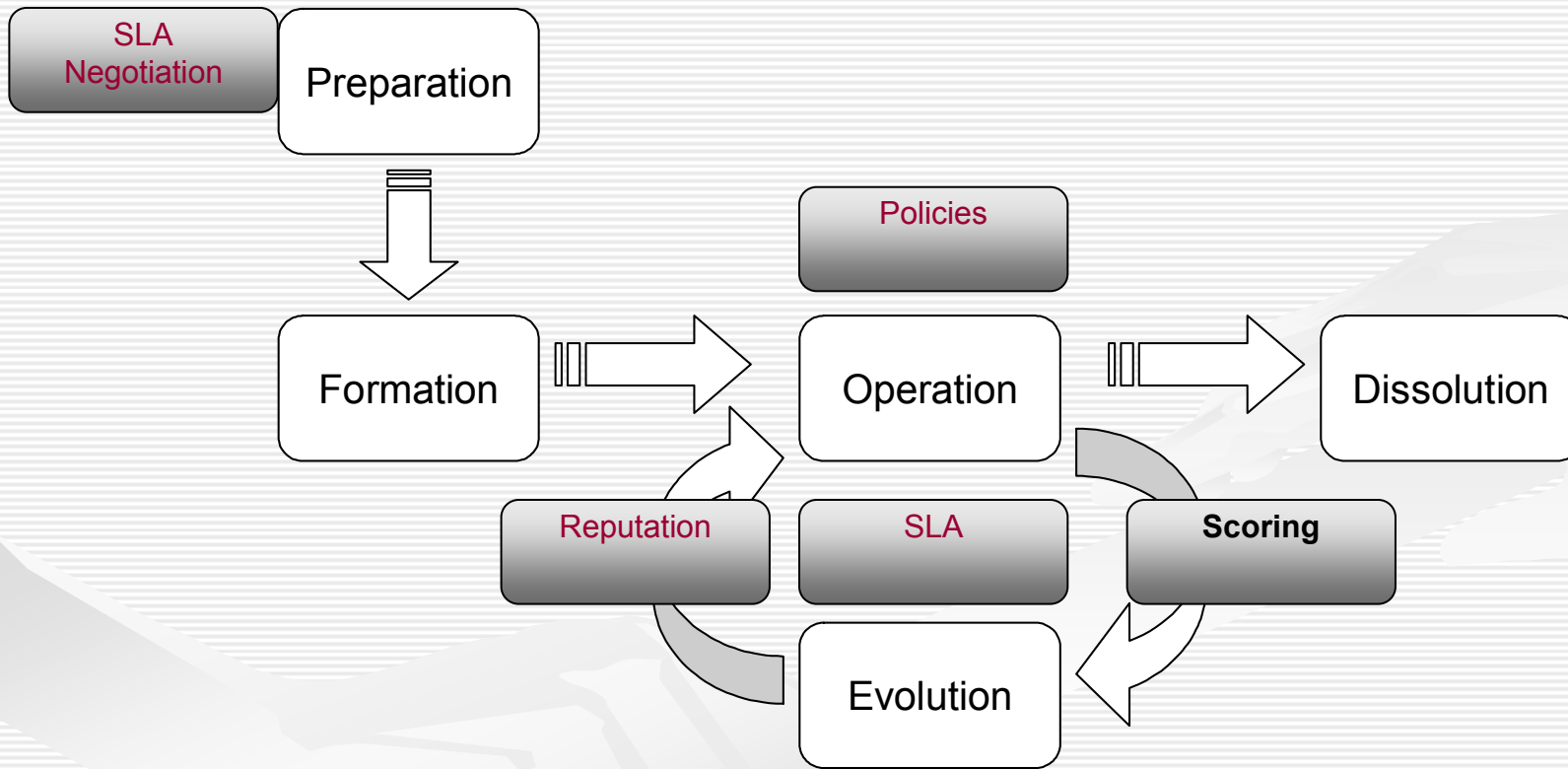


Information Society
Technologies

- TrustCoM basics → VO
- Virtual Organisations phases
- E-Learning story board
- Workflow : WS-CDL → BPEL
- Framework components
- Member/Supplier Selection, Scoring & Reputation
- SLA Setup
- SLA Operation
- SLA Violation
- Virtual Organisation Learning Operation
- Real business model.

- The mission of the **TrustCoM** integrated project is to provide a trust and **contract management framework** enabling the definition and secure enactment of collaborative business processes within Virtual Organisations that are formed **on-demand**, **self-managing** and **evolve dynamically**, sharing computation, data, information and knowledge across enterprise boundaries, in order to:
 - tackle collaborative projects that their participants **could not undertake individually** or
 - to collectively offer services to customers that **could not be provided by the individual enterprises**.

Virtual Organisation phases



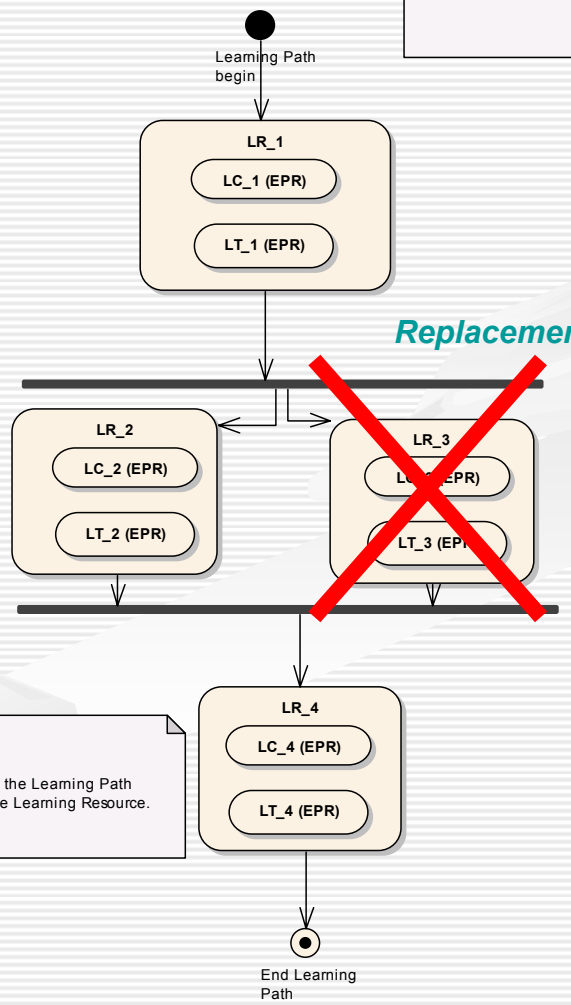
eLearning storyboard

- A student wants to make use of the internet for learning courses according to its individual needs, covering not only the **learning goal**, but also the current knowledge of the user with respect to the topic.
- In order to receive such a learning course, he contacts a “VO Learning Portal Service” that provides the capability of arranging a set of learning providers from a “**Learning Enterprise Network**” so as to provide the bespoke lessons.
- Setting up a collaboration of learning resource providers **tailored to the student’s respective needs**.
- This information implicitly defines the **learning path** details and as such the “workflow” guiding the learning providers.
- A General Virtual Organisation Agreement (**GVOA**) is set up that legally binds the participants to the VO and its specific conditions & terms.

Learning path workflow to achieve certain competences

Name: WorkFlow_LearningPath
 Author: isoler
 Version: 1.0
 Created: 09/05/2006 12:27:24
 Updated: 25/05/2006 12:02:01

WS-CDL Workflow overview with associated tests, and EPR.



LR_* Learning Resource fully qualified EPR.
 LC_* Correspond to the Learning Course chosen from the Learning Path
 LT_* Correspond to the Learning Test associated to the Learning Resource.

- METACAMPUS**
- Home
- MarketPlace Info
- FAQs
- Suggestions & Questions
- My Basket
- My Folder
- Select Learning Resource
 - Assisted Search
 - Multi-Criteria Search
 - Browsing Catalogue
- My Profile
 - Modify Profile
 - Unregister
 - Modify Configuration
- MetaCampus Contact
- Log Out

Buscar 

My Folder

Hi TrustCom!

Here you have the Learning Resources you have bought. T

To see more details, click on the +info icon.

- UML modelling with Rational Rose
UML modelling with Rational Rose

| price: € | anguage | dur |
|----------|---------|-----|
| 30 € | English | |


- Programming in the New Knowledge Society
Programming in the New Knowledge Society

| price: € | anguage | dur |
|----------|---------|-----|
| 18 € | English | |

- Development Tools
Development Tools


| price: € | anguage | dur |
|----------|---------|-----|
| 35 € | English | |

- Everything You Wanted to Know about Data Bases
Everything You Wanted to Know about Data Bases

| price: € | anguage | duration: h. | tutor |
|----------|---------|--------------|---|
| 66 € | English | 973 |  |


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- UML modelling with Rational Rose
UML modelling with Rational Rose

| price: € | anguage | duration: h. | tutor |
|----------|---------|--------------|---|
| 30 € | English | 1 |  |

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- Programming in the New Knowledge Society
Programming in the New Knowledge Society

| price: € | anguage | duration: h. | tutor |
|----------|---------|--------------|---|
| 18 € | English | 0 |  |

http://212.0.127.139 - \trustComTemp\gt4.pdf (application/pdf Objeto) - Mozilla Firefox

Chapter 7. GT 4.0 Sim

[information about deploying the component into various c

Testing

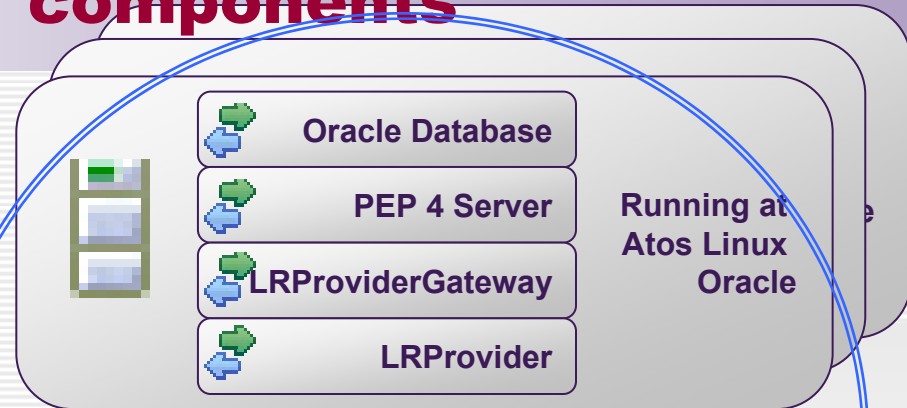
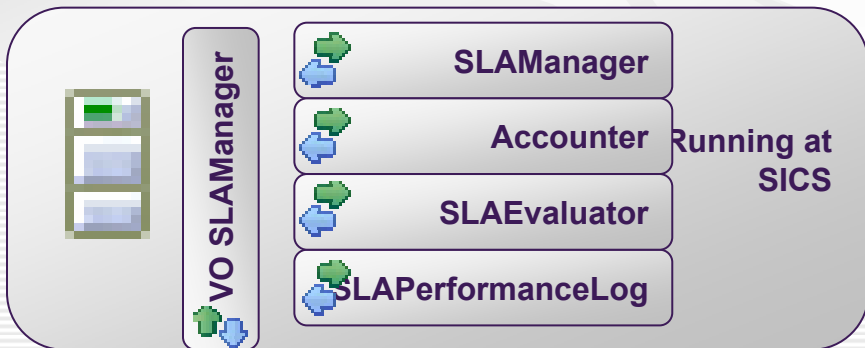
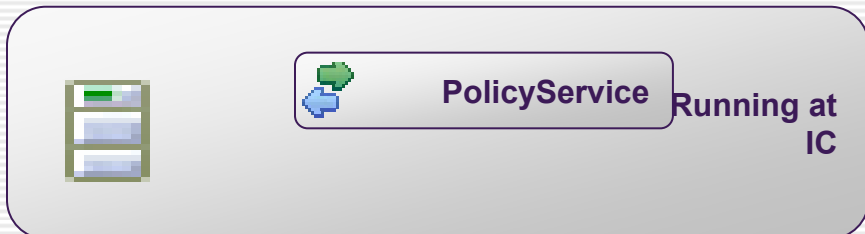
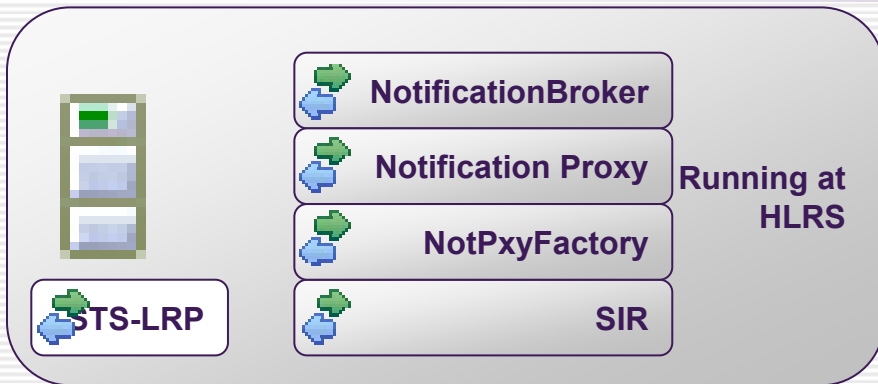
To verify that the SimpleCA certificate is installed in /etc/certificate is in place with the correct permissions, run:

```
user$ grid-proxy-init -debug -verify
```

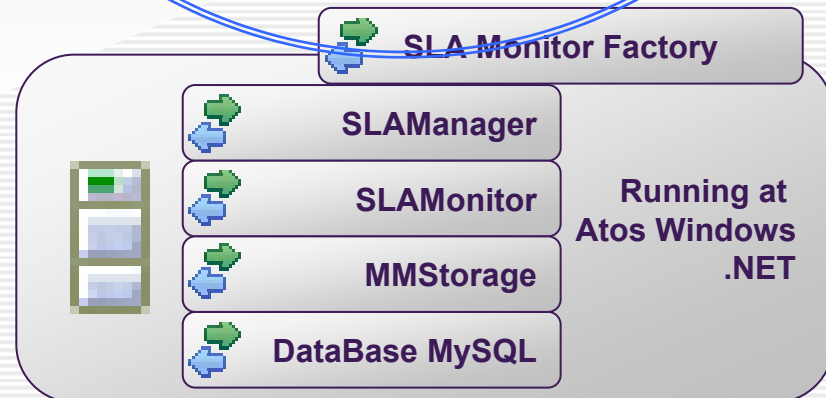
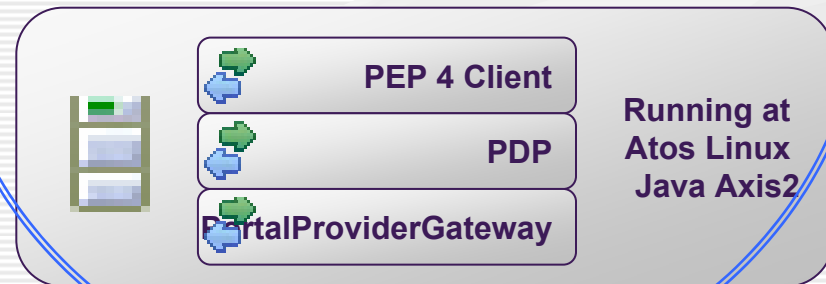
After entering your passphrase, successful output looks like

```
[bacon@mayed schedulers]$ grid-proxy
User Cert File: /home/user/.globus/t
User Key File: /home/user/.globus/us
Trusted CA Cert Dir: /etc/grid-secur
Output File: /tmp/x509up_u1817
Your identity: /O=Grid/OU=GlobusTest
Enter GRID pass phrase for this ider
Creating proxy .....
.....+++++++
Done
Proxy Verify OK
Your proxy is valid until: Sat Mar 2
```

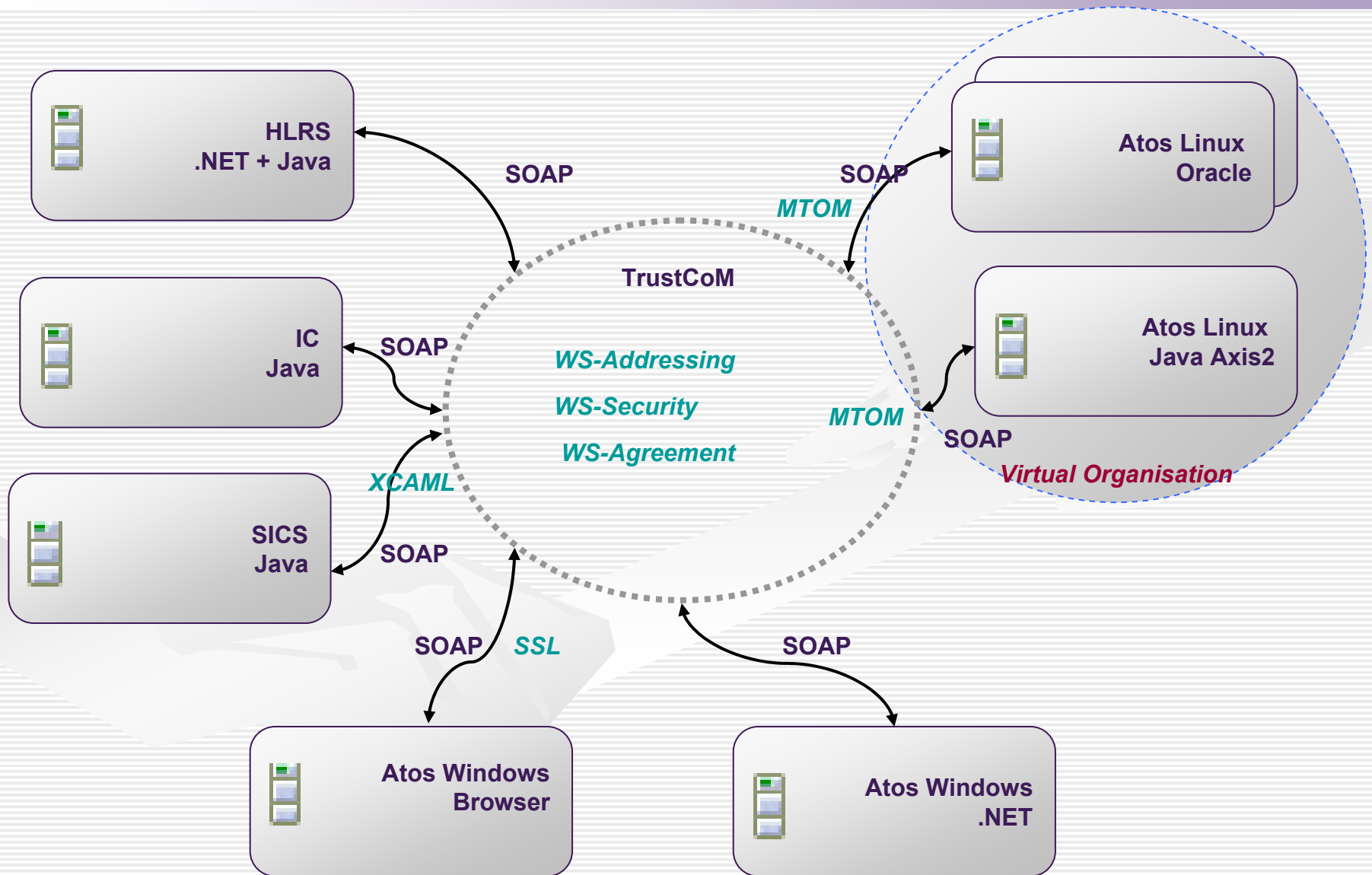
Overview of the different components



Virtual Organisation



Distributed Deployment model



Component definitions

1. The SLA Monitor provides the performance related status information *on schedule*
2. The Notification sub-system provides the information as an event to all subscribers
3. The status information is forwarded to the evaluator which compares status with agreed upon SLA
4. The evaluation result is pushed back to the VO as an event notification
5. The violation / fulfilment event is distributed to all subscribers
6. This information is then
 - a) Evaluated by the Policies
 - b) Converted into a reputation score
7. The computed score is forwarded to the (external) Reputation Manager to update the SP's reputation
8. And is then evaluated by the VO Policy Service to identify potential actions

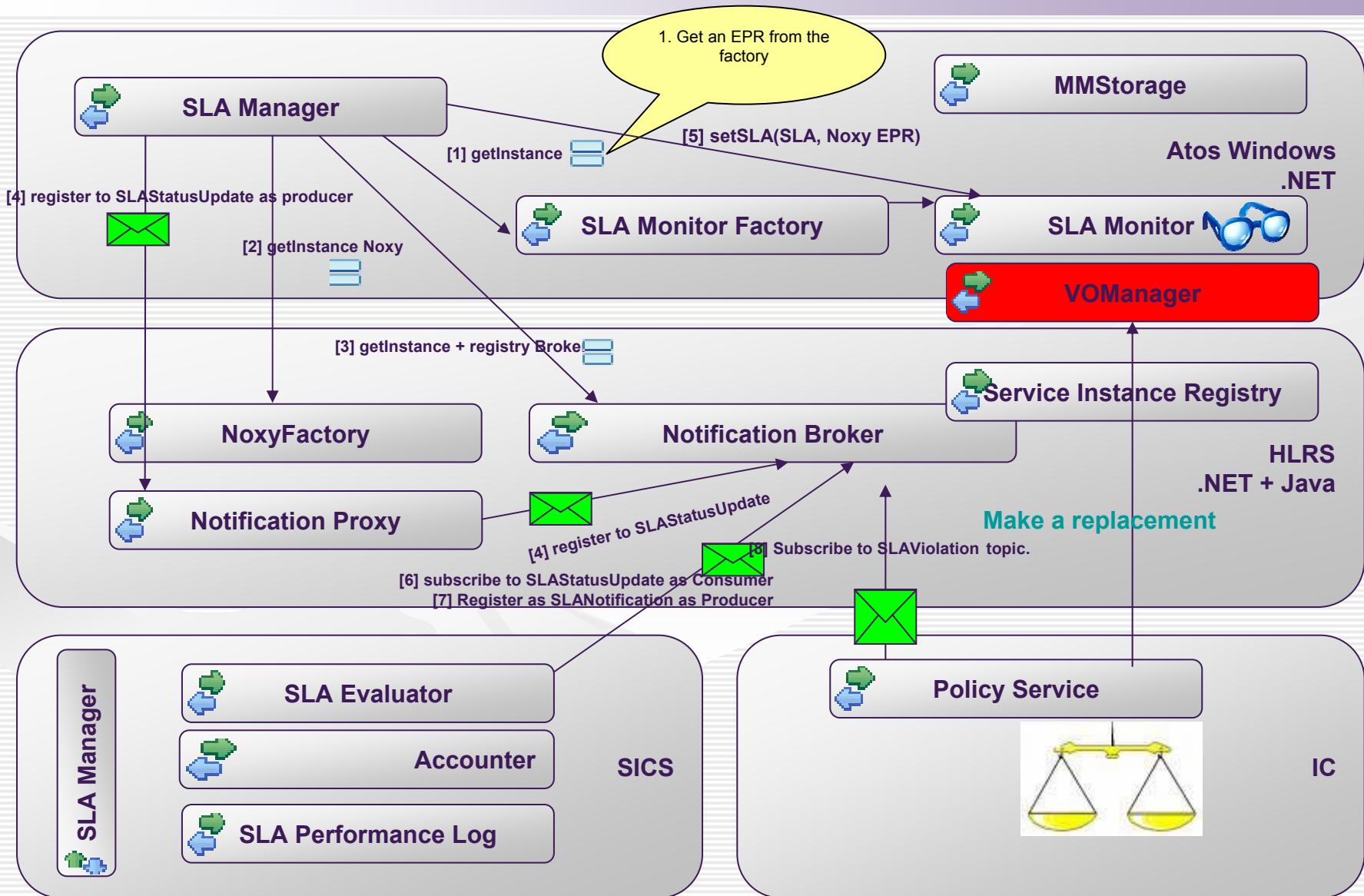
SLA & Reputation criteria

- SLA measurement model
 - Metrics: Response time
 - Monitor: Scheduled
 - Range: Which is the QoS to be fulfilled?
 - Policies: What are we going to do after a violation?

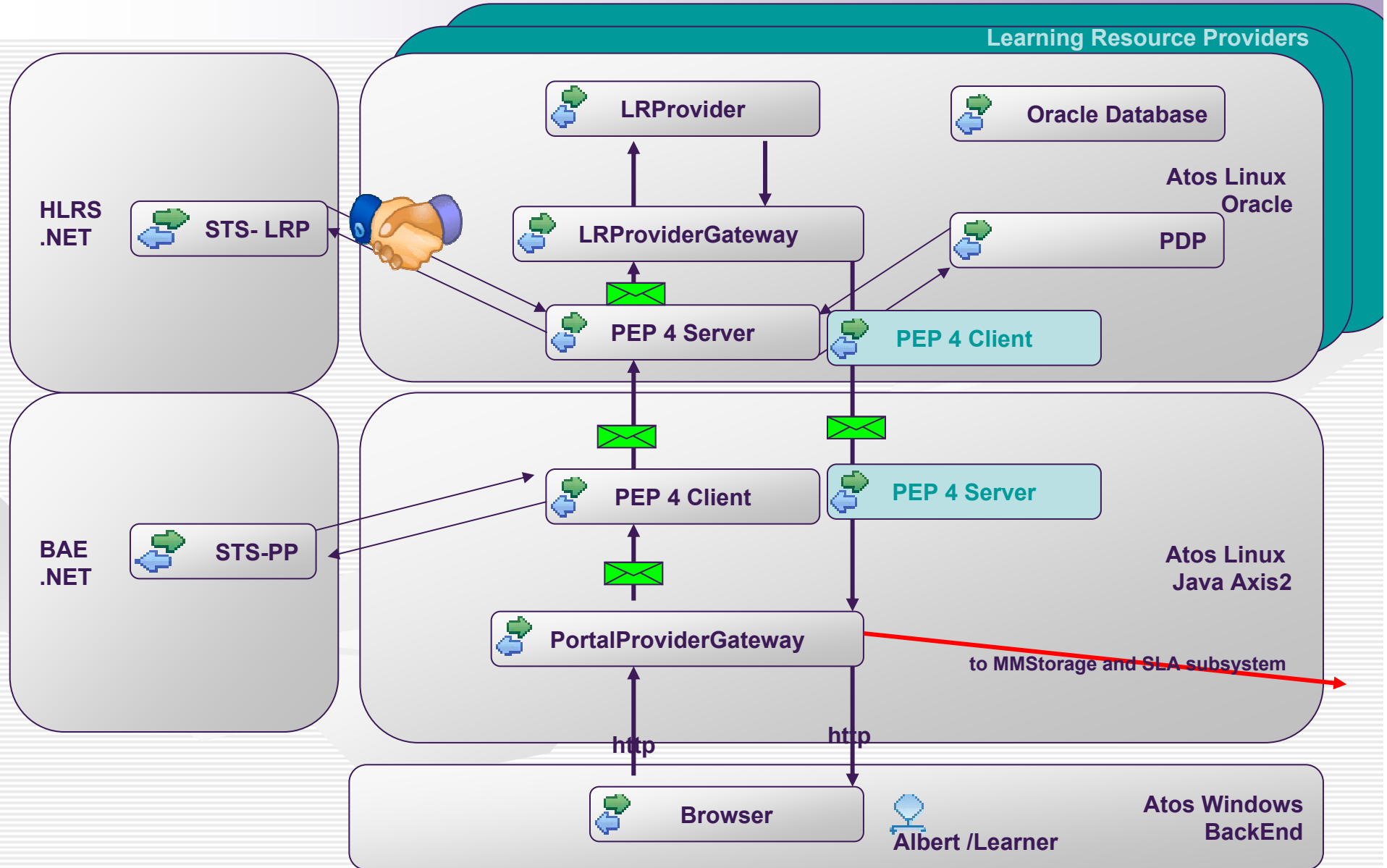
- Performance measures (Response time)
 - 1) Time to do the course (deadline) – user
 - 2) Time to provide the course (performance-RSP time)
 - 3) Result of the Test
 - 4) Number of repeats (by test)
 - 5) User satisfaction and questionnaire
 - 6) Student repeat use of eLearning Service (attention)

- Selection Criteria - Measures for Provider Selection / Scoring
 - Pass-over-fail: 70% pass versus fail of results
 - Repeat rate-over-courses: 50% repeats over a Window
 - User-satisfaction over the history of the service provider
 - Overtime-measure over the history of the service provider
 - Count of provisions over the history of the service provider
 - Price
 - New entrant measures ? Undercutting the price
 - Recent changes

SLA & Notification Setup

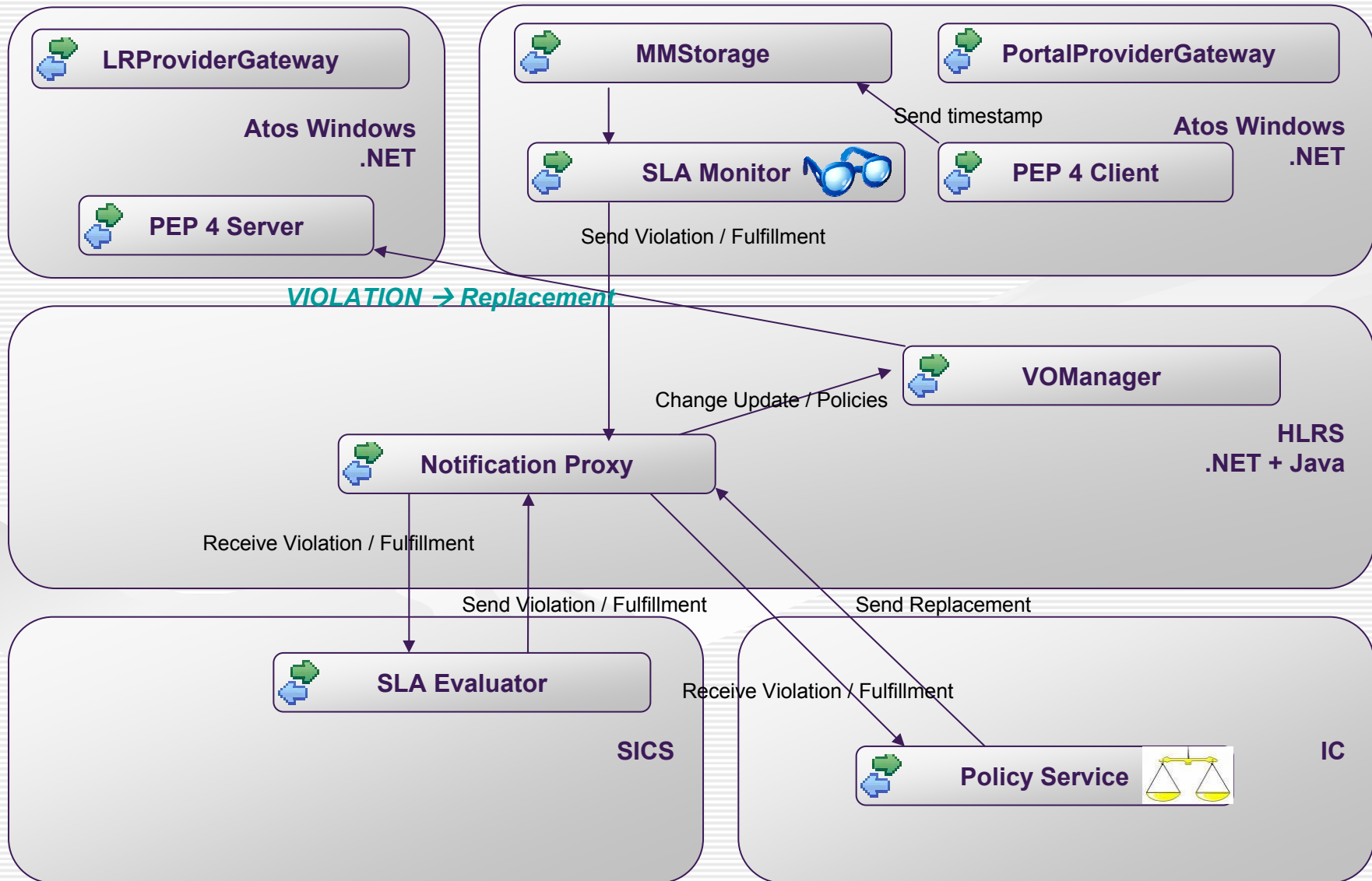


VO Learning operation

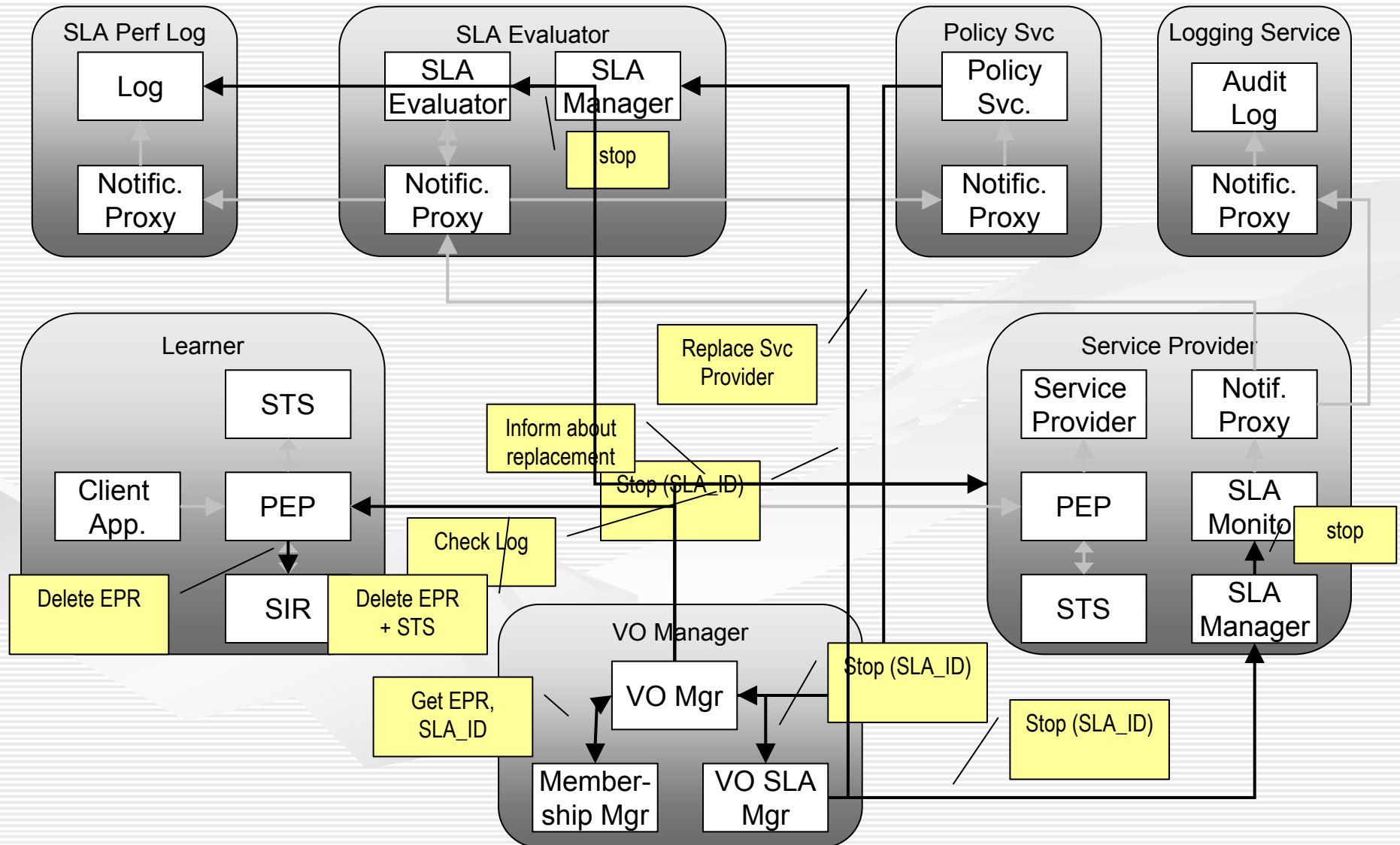


1. The status is monitored and evaluated but does not raise a violation
2. The status triggers a violation, causing a decrease in the reputation
3. The violation decreases the reputation so much that reconfiguration is initiated

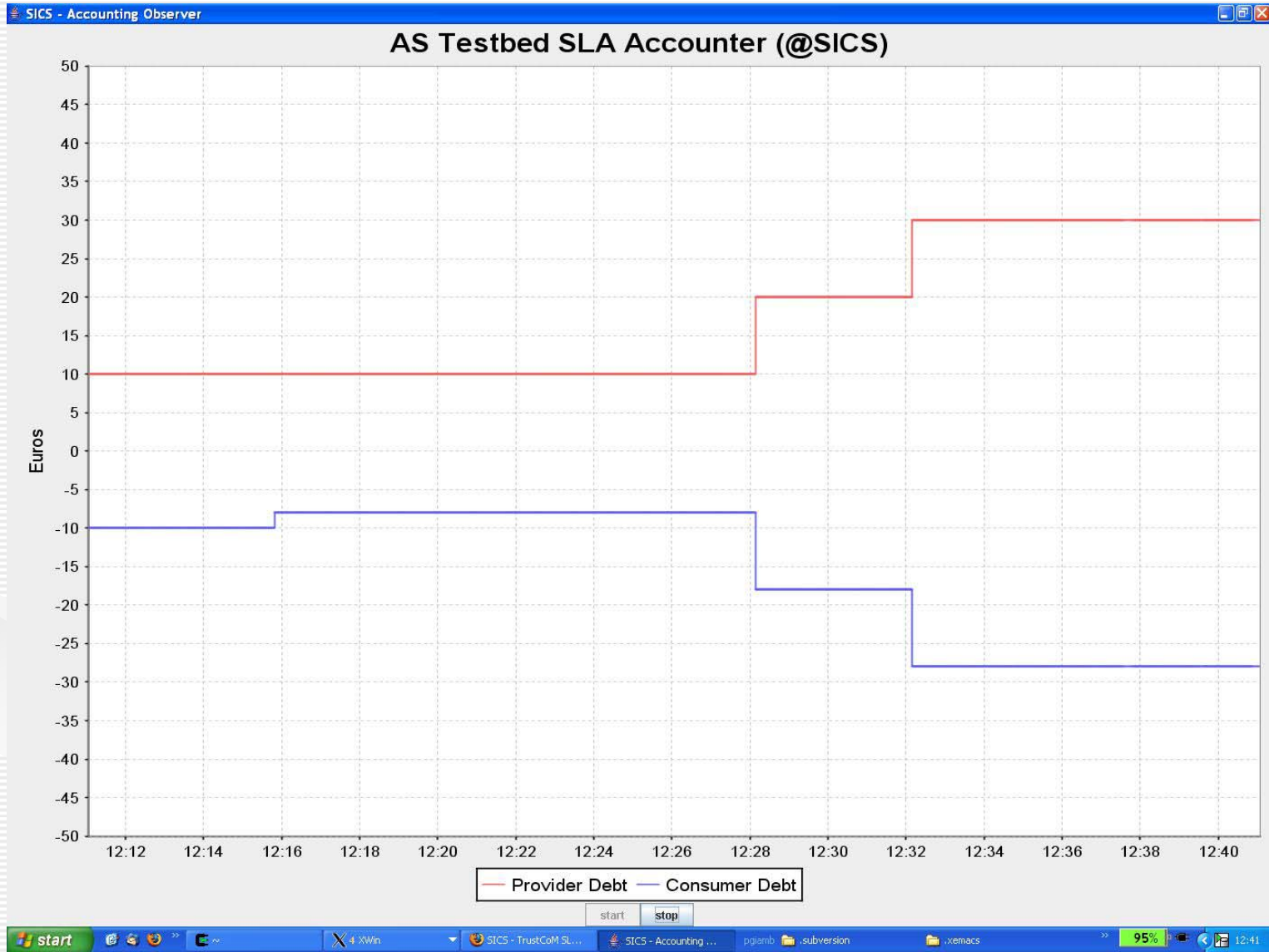
SLA Operation



SLA Violation -> Expulsion



Business application



- Every time a violation is made, the price raises up.
- If so many times the violation is produced, an automatic replacement is needed.
- On the other hand if the fulfillment of the SLA is accomplished, then the price is decreased.

Deployment effort for introducing new providers

- Replacement a supplier **on the fly**
- **Less** Person effort
- SLA in place, monitored (framework)
- Trusted & secured framework
- Awareness of providing good provision to the weaker partner. (Learner)

Conclusion

- Security, **no cost** to become a new supplier.
- Within the implementation of this test bed, the providers have a **fully functional platform**, to just get in the TrustCoM framework, without doing major changes to their respectively previous legacy systems, allowing though to ensure a **correct, secure, and reliable** transmission of the courses through the internet.

Thank you

Questions



SLA process with integration to Reputation, Scoring and Policy

SLA Monitor

SLA = overload
50%

SLA Eval

SLA = Overload, 20-50
Member Id, SLA Id

Policy

Rep

System Log

Scoring

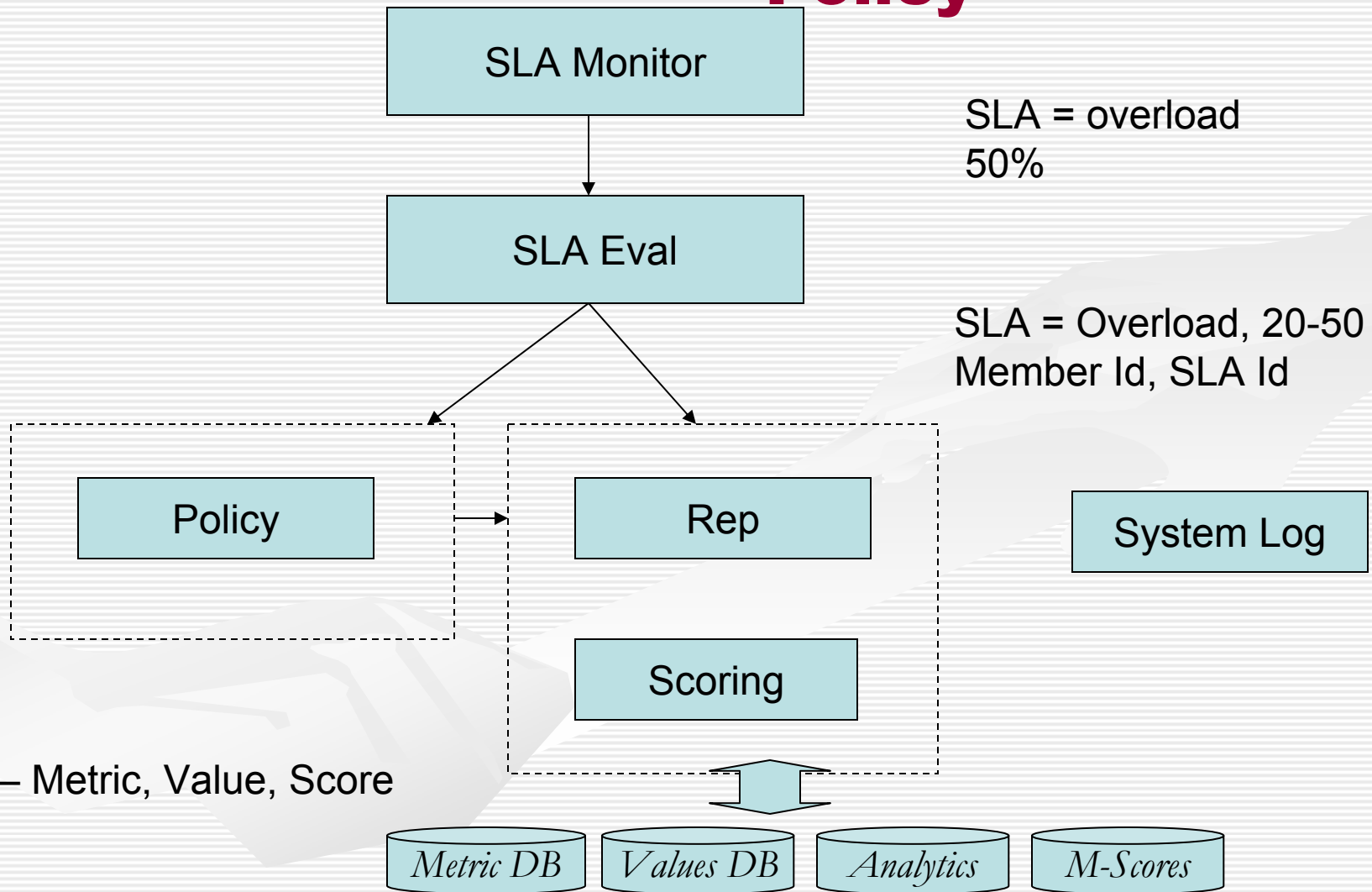
Member – Metric, Value, Score

Metric DB

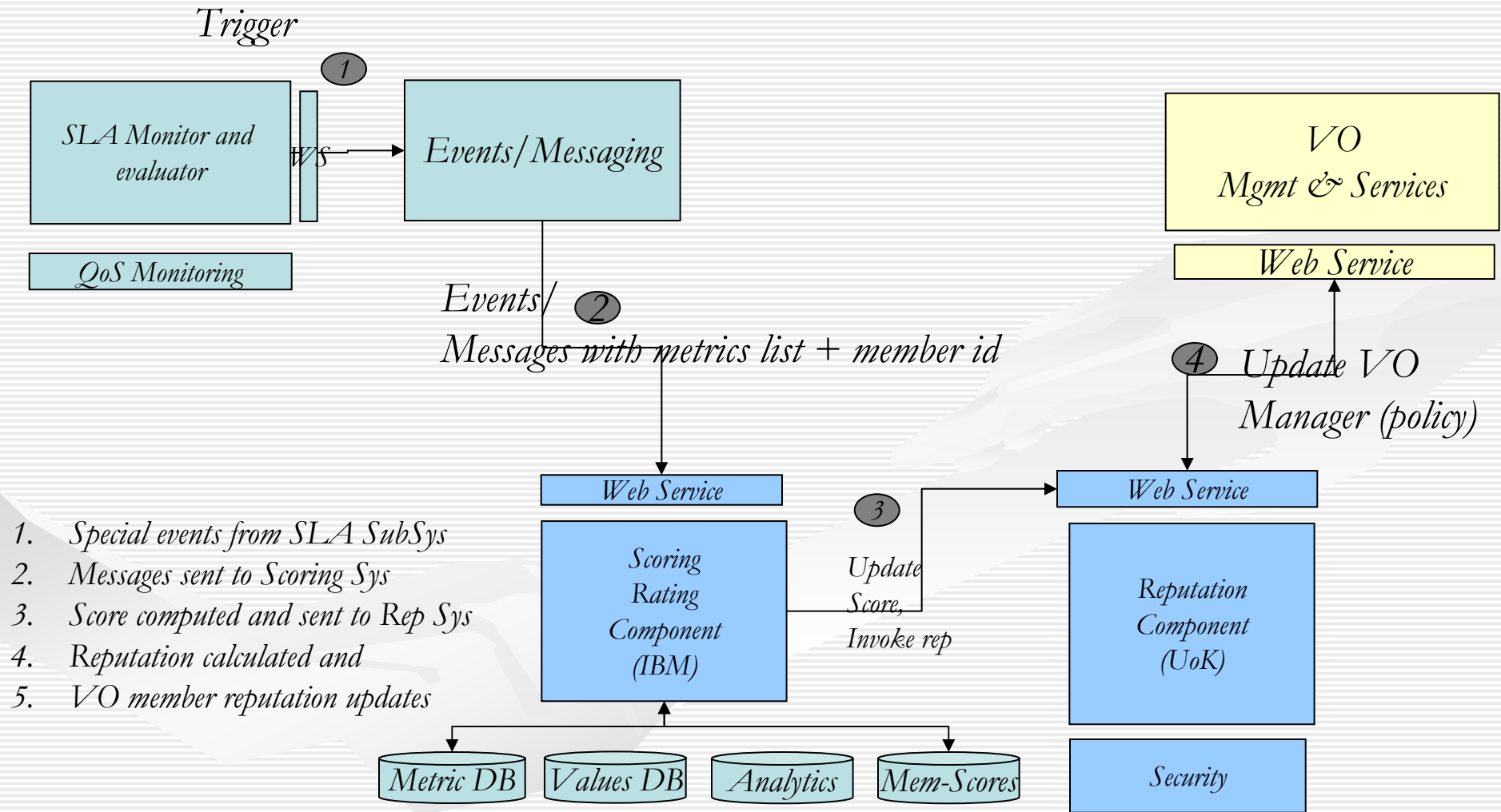
Values DB

Analytics

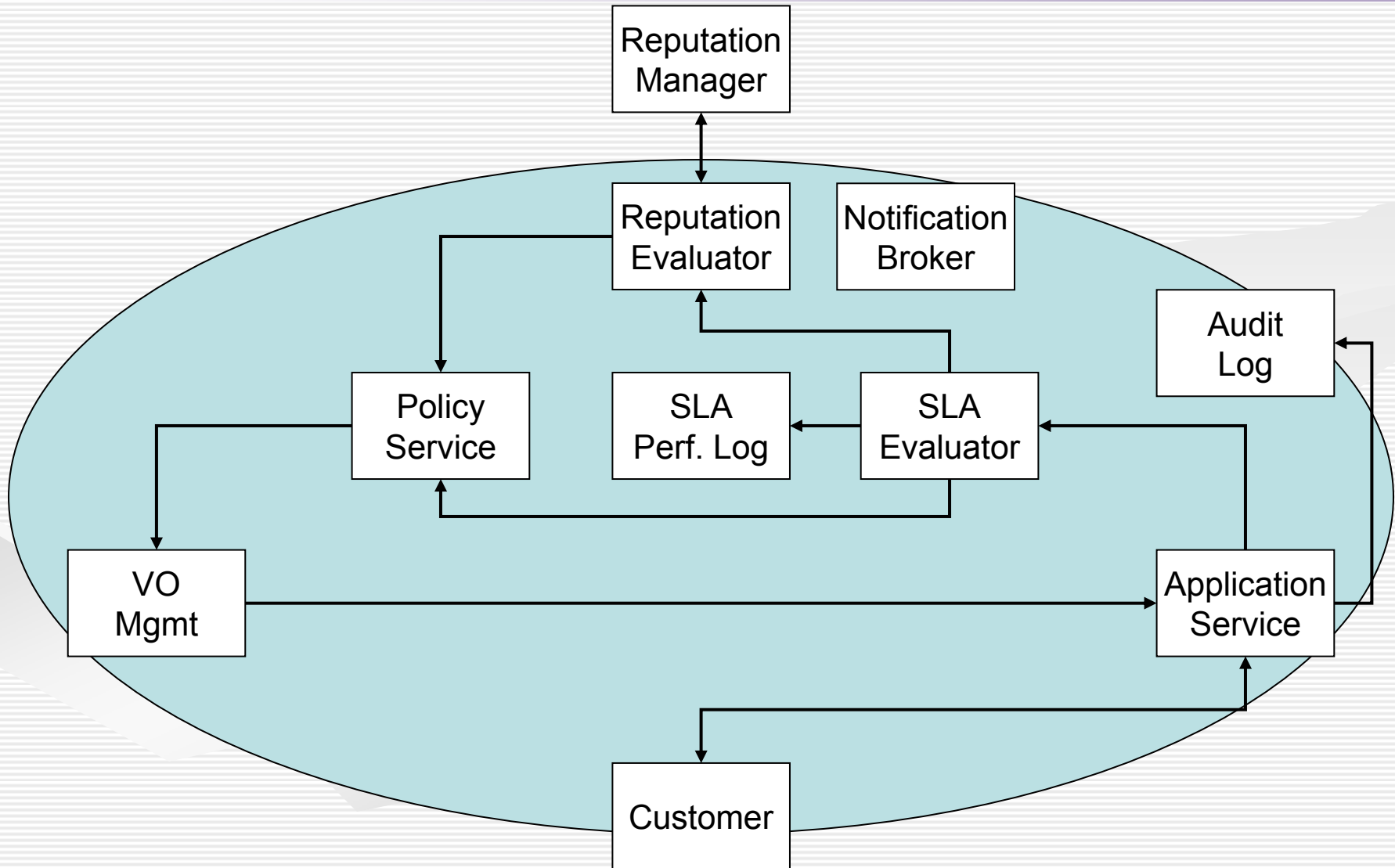
M-Scores



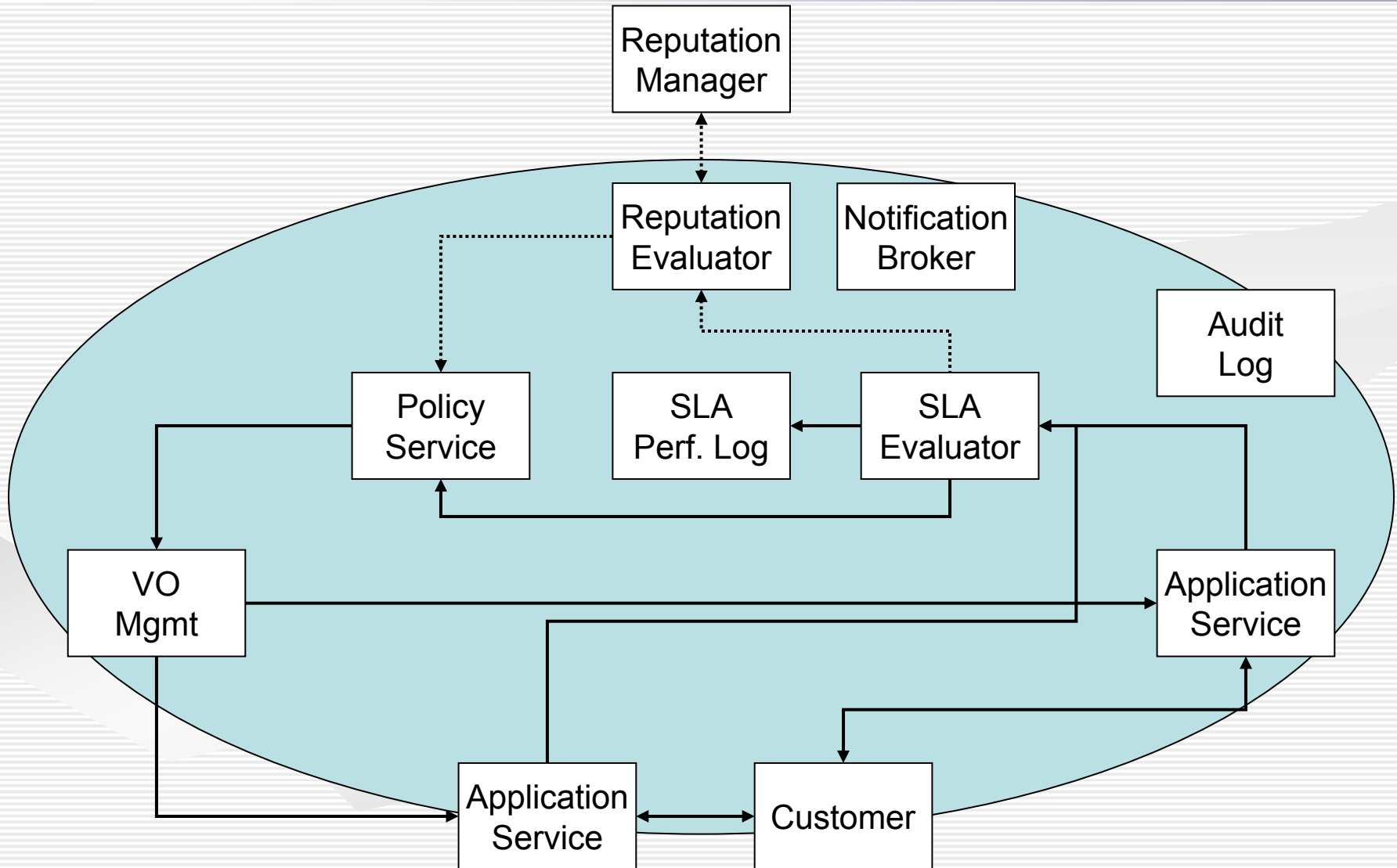
Integration Process Scenario 1:



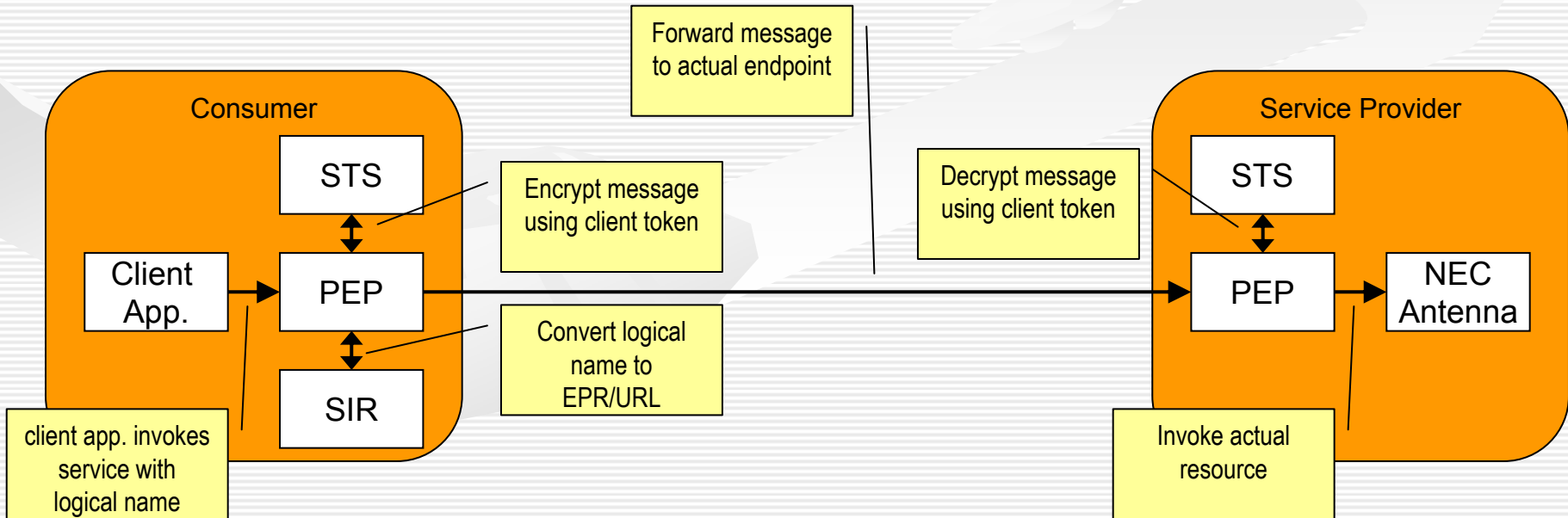
Principal Communication 1 - reconfiguration



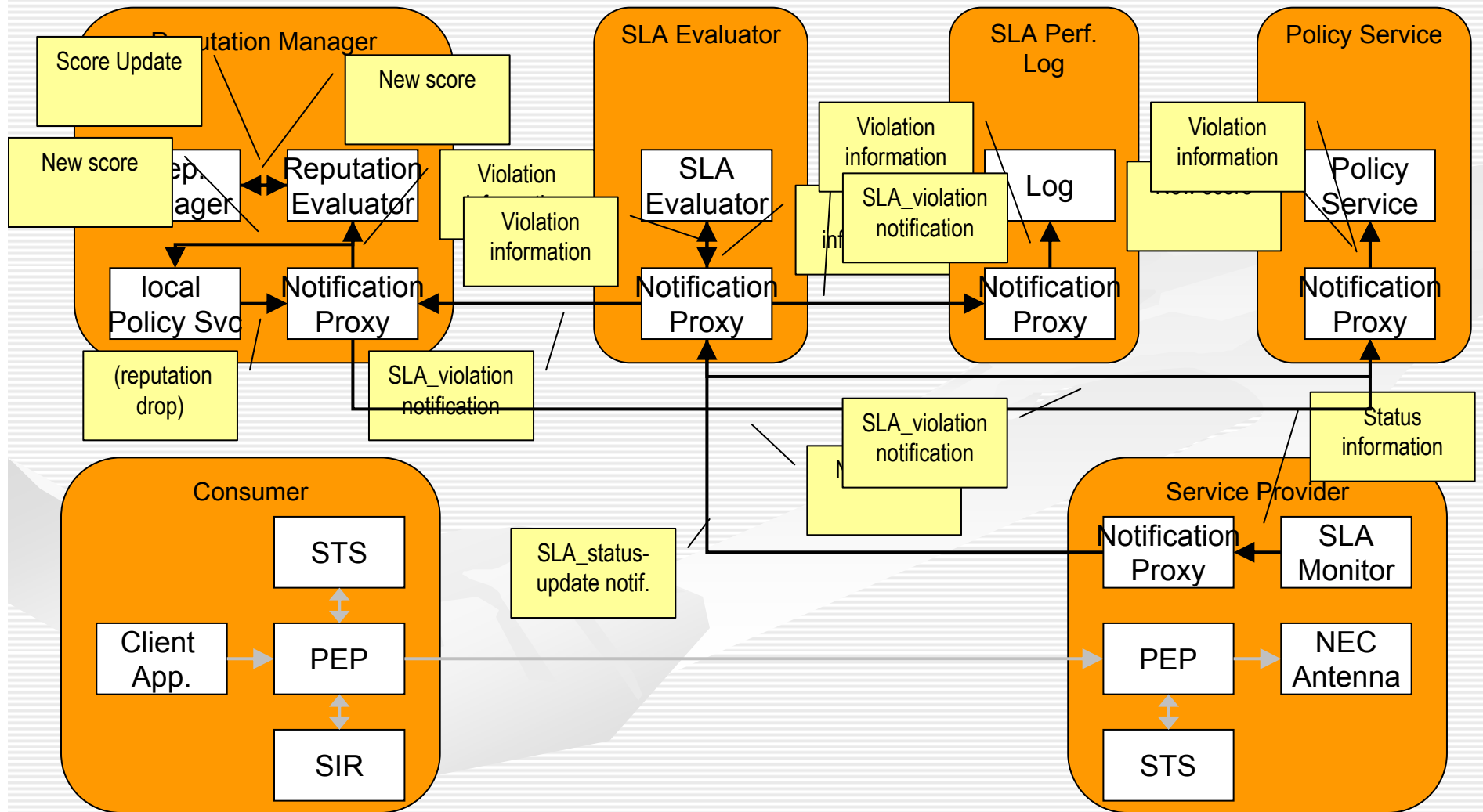
Principal Communication 2 - evolution



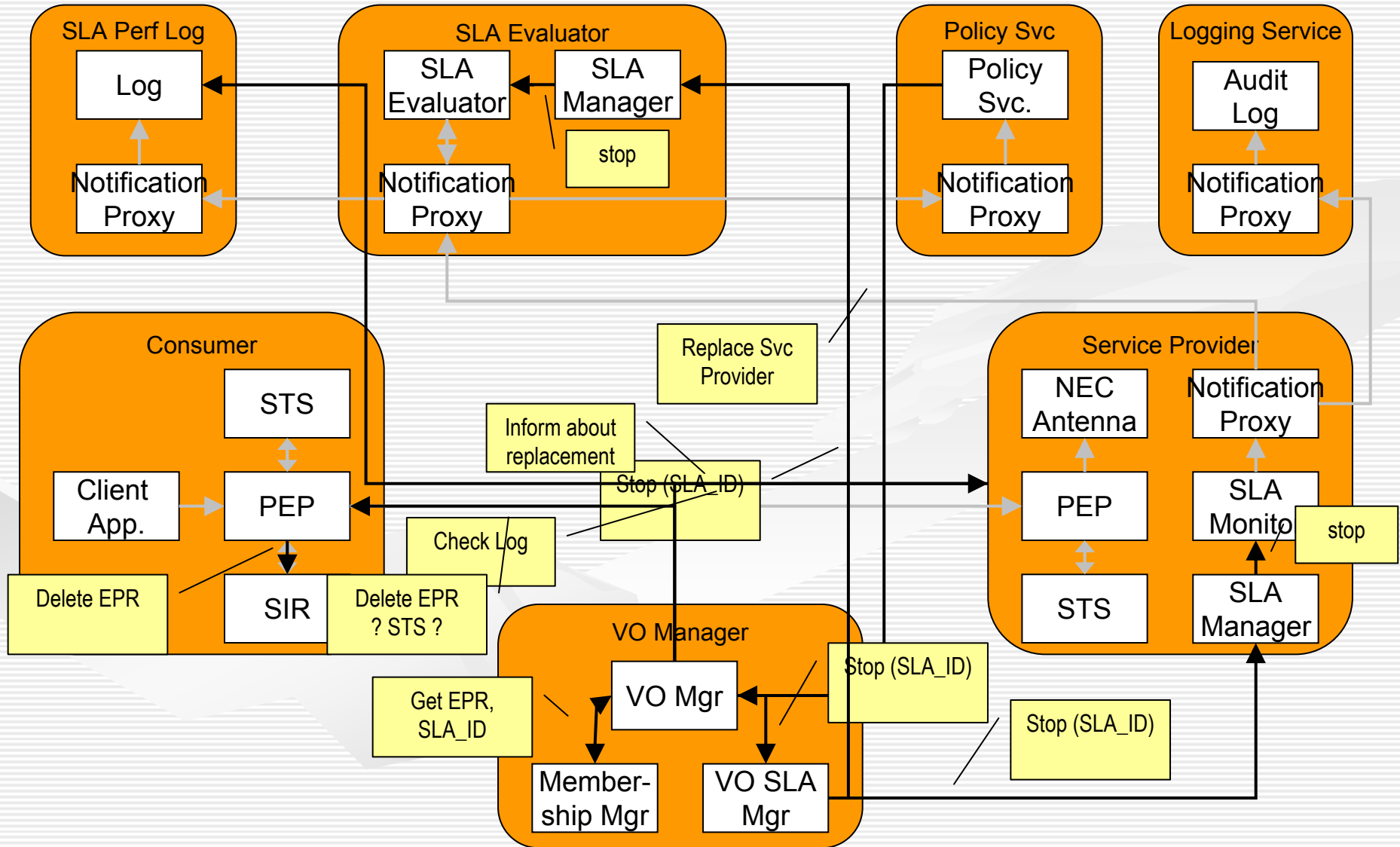
Demo 1: simple access



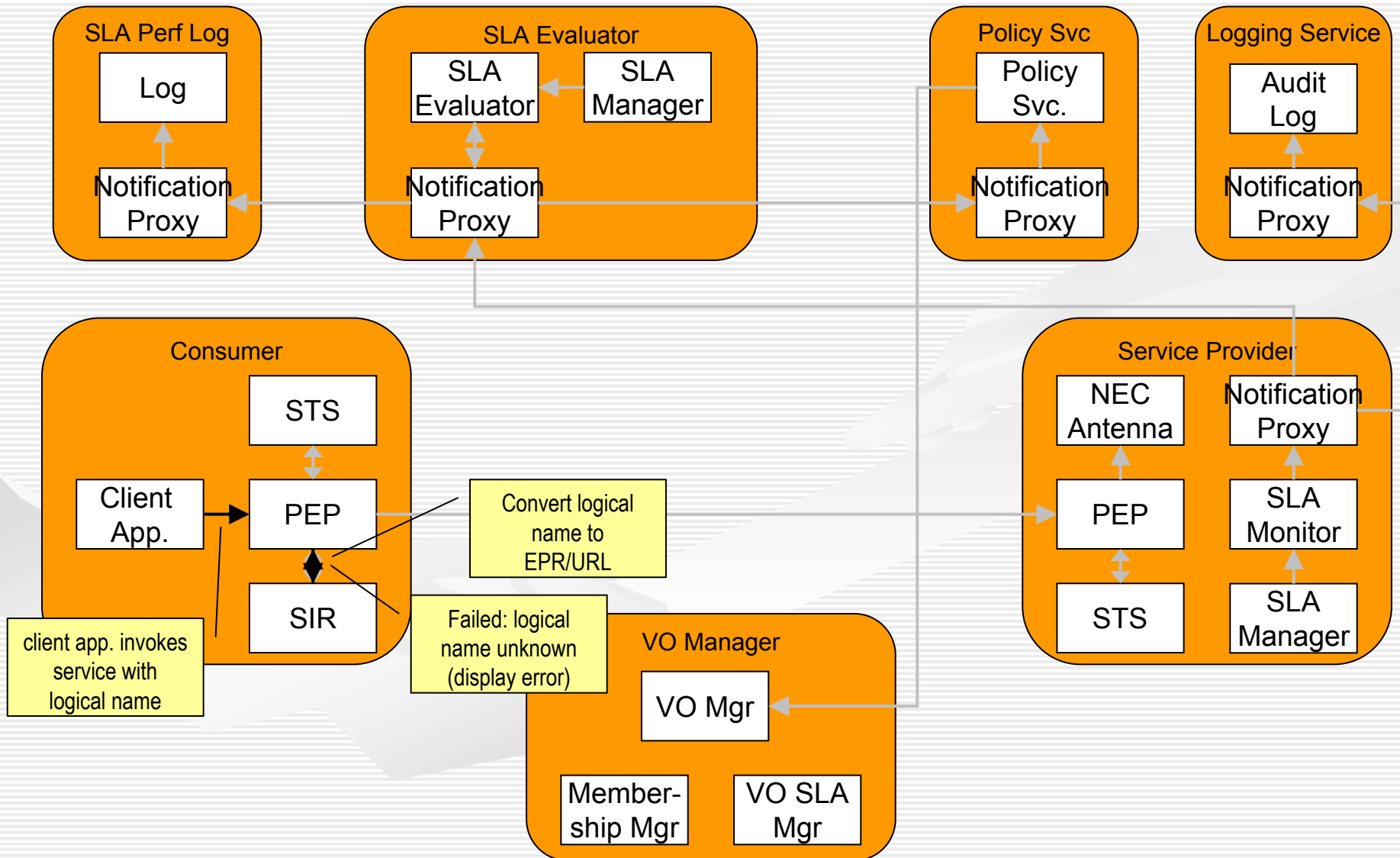
Demo 2a: Monitoring & Reputation



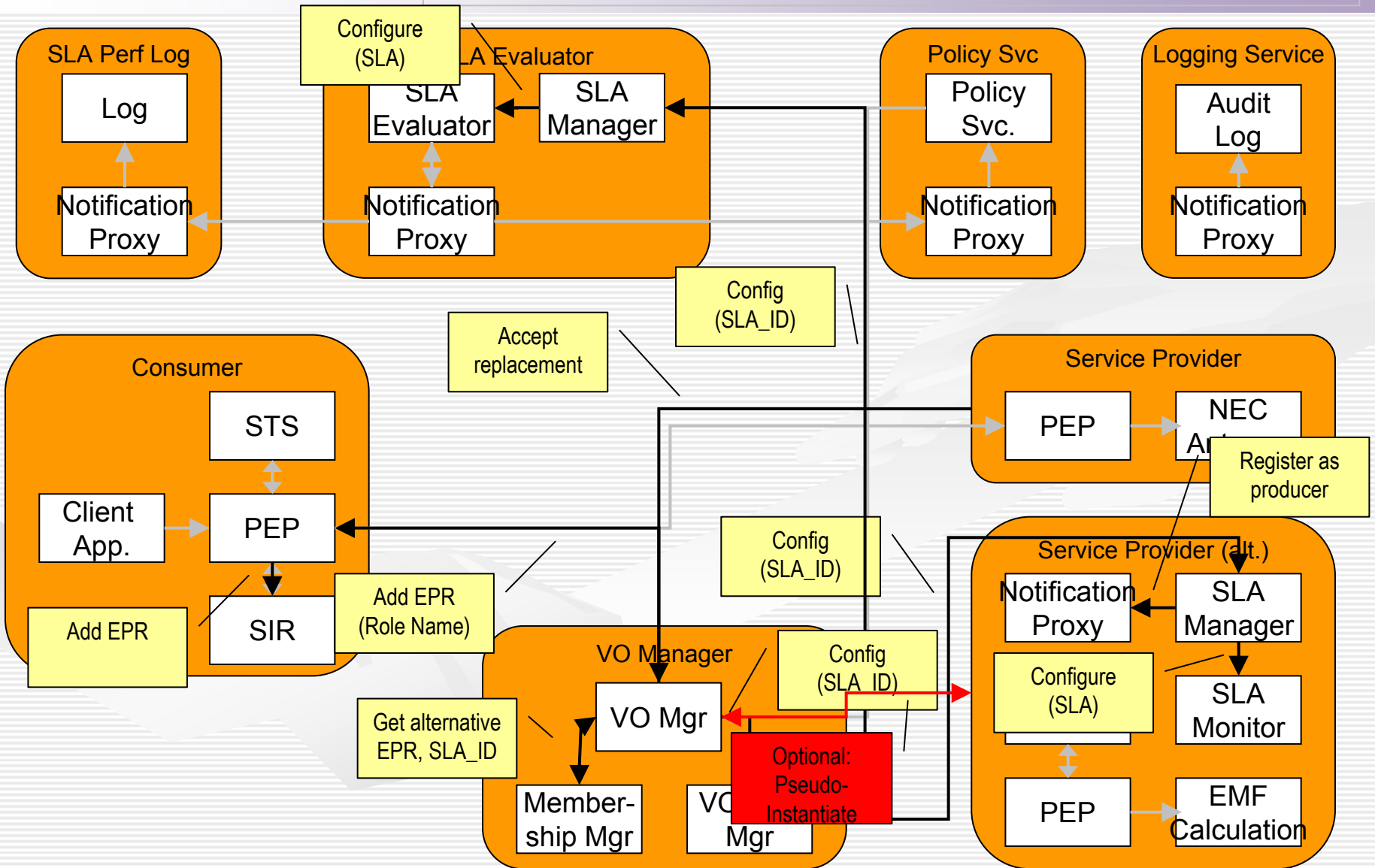
Demo 3a: Violation -> Expulsion



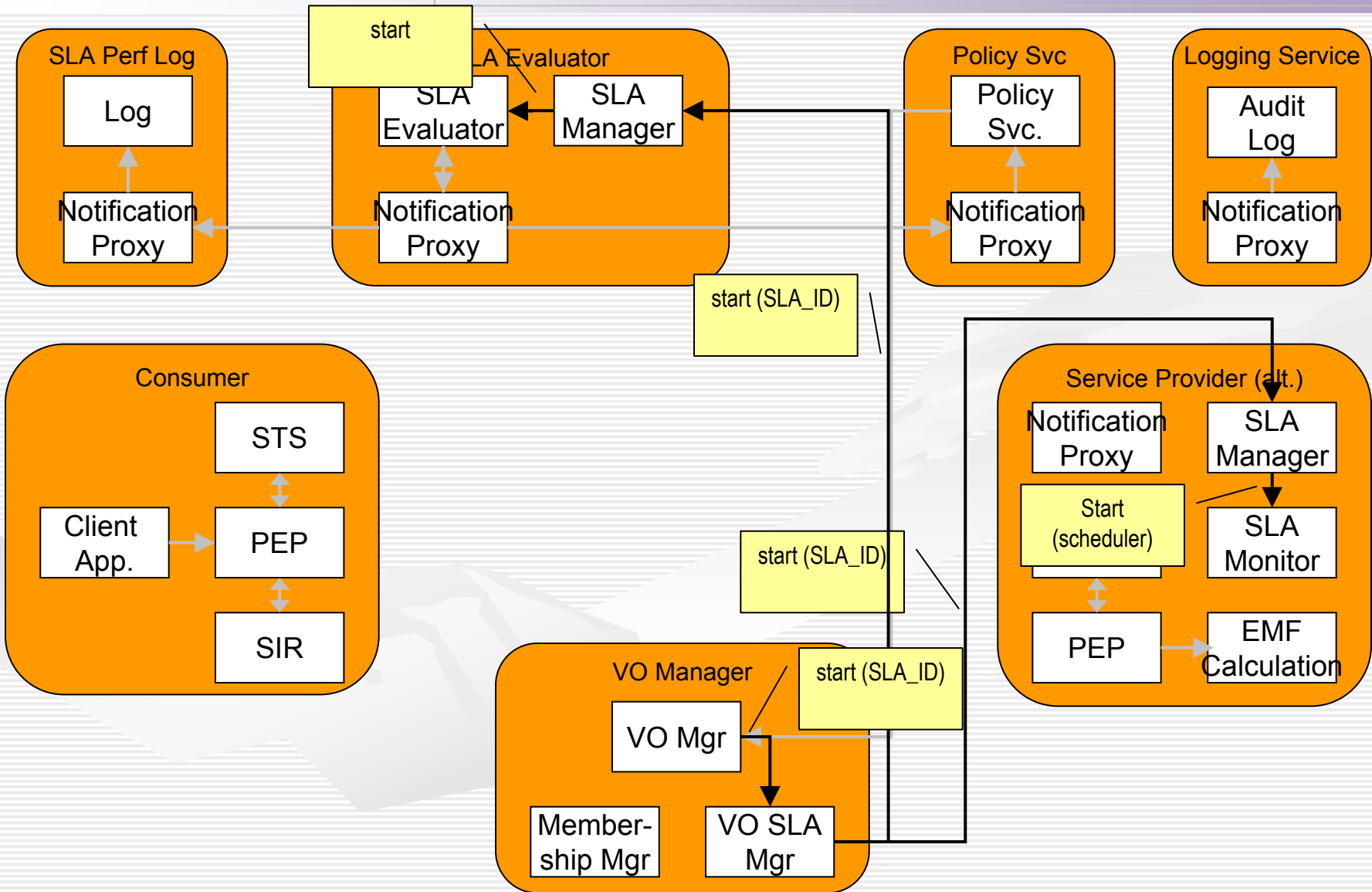
Demo 3b: Access during Evolution



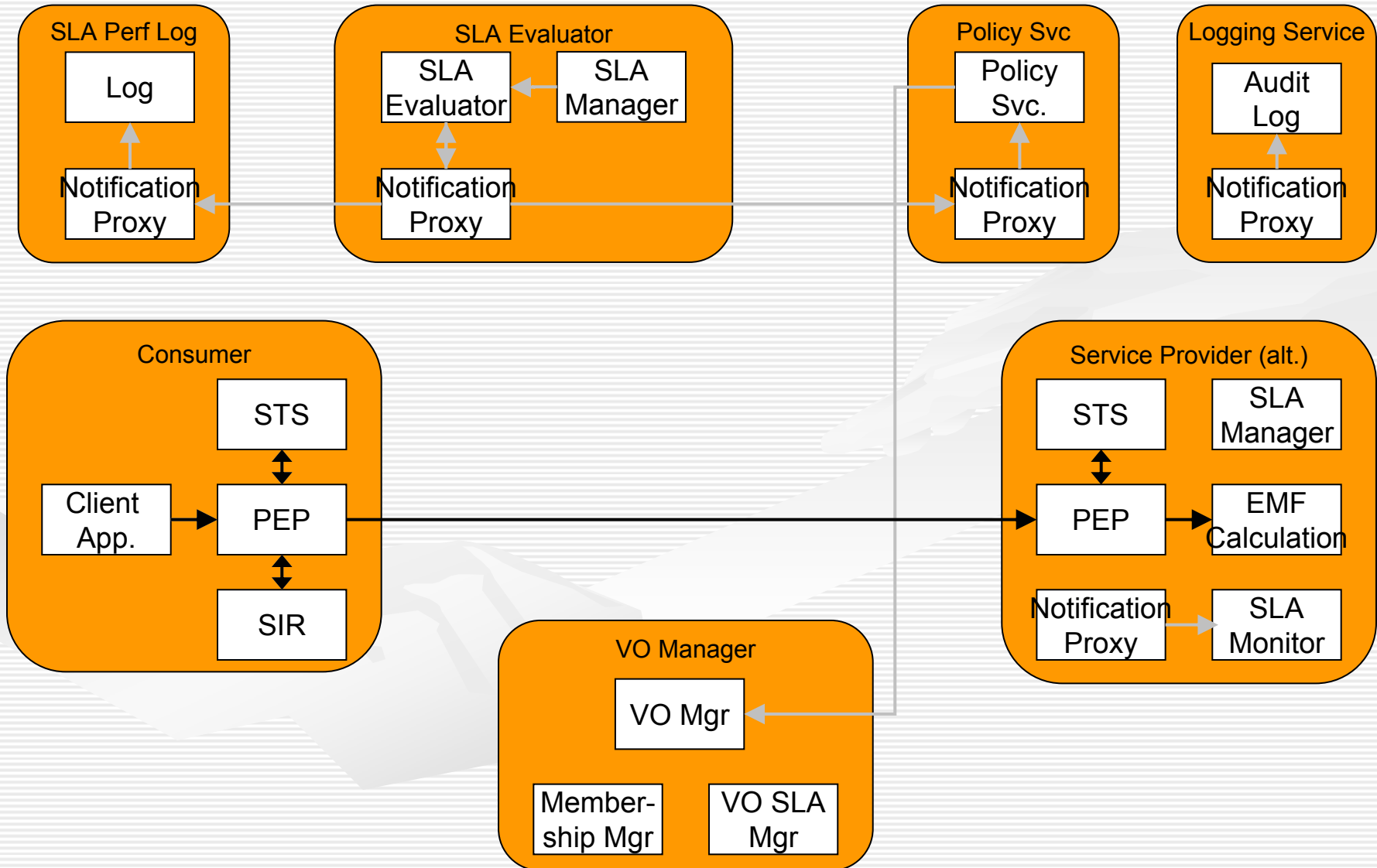
Demo 3c: Expulsion -> Evolution (formation)



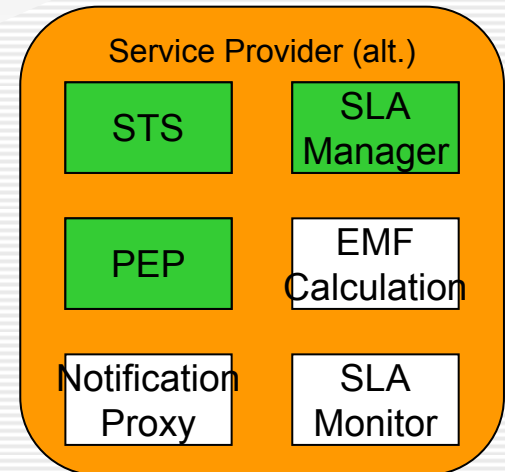
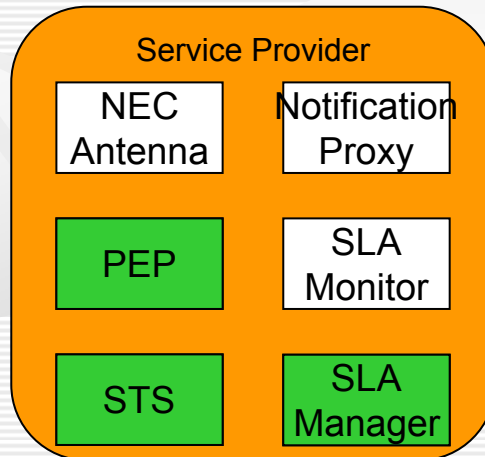
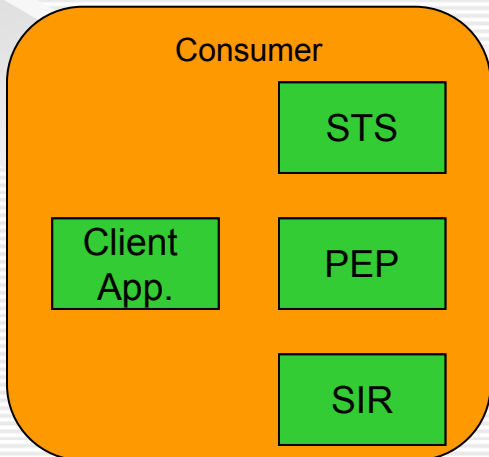
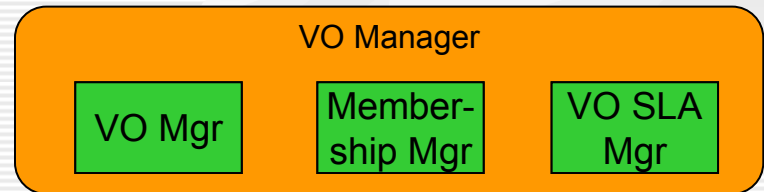
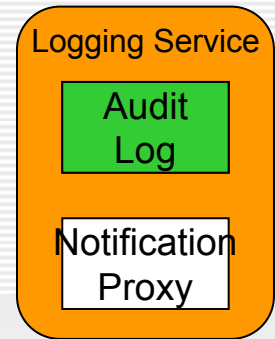
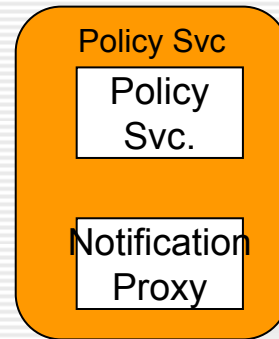
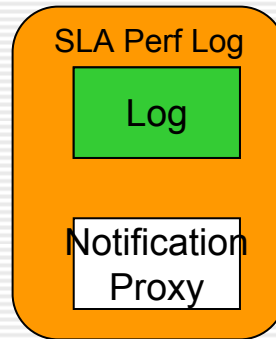
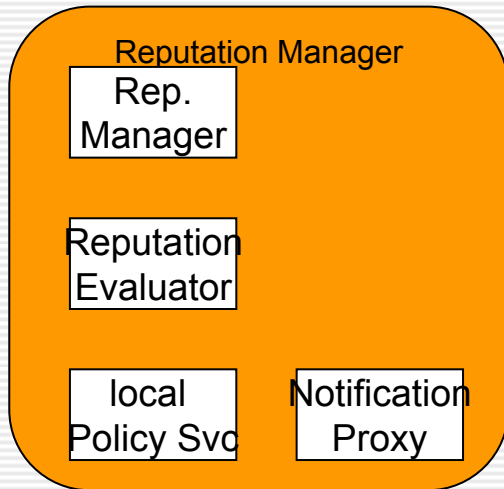
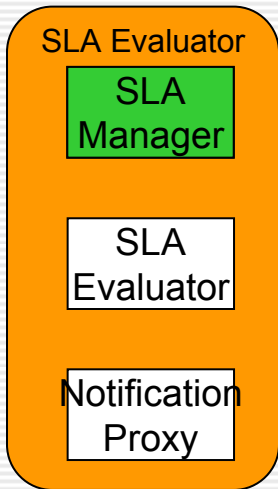
Demo 3d: Expulsion -> Evolution (start operation)



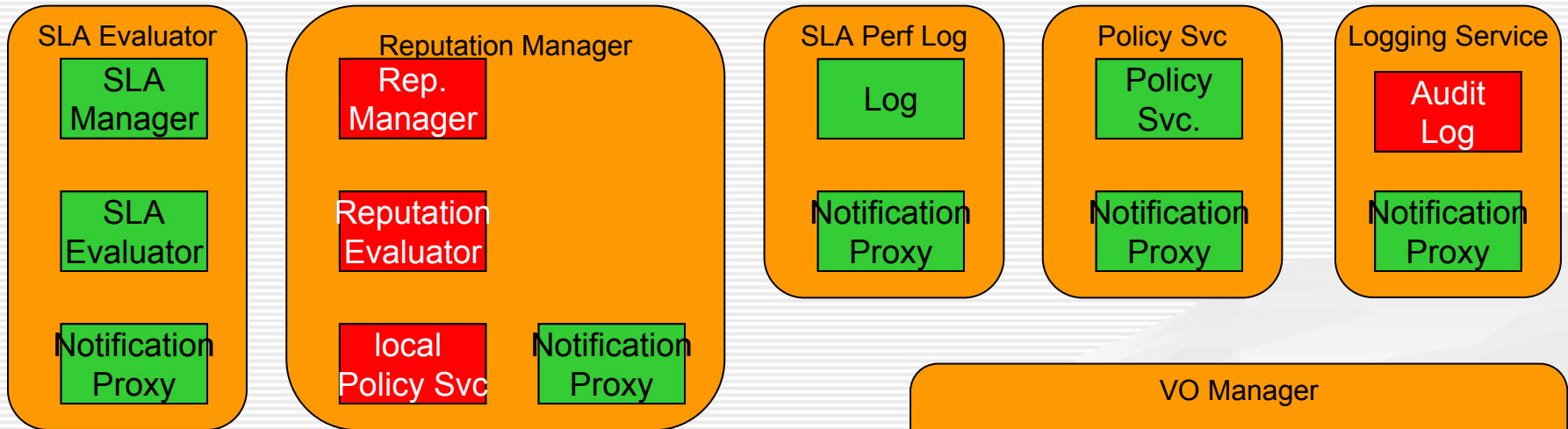
Demo 3e: access after evolution



New components (as opposed to last phase)



What's real What's not there



„Fake“ here means that these are not the components provided by the respective partners

