Technical Specification Group Services and System Aspects **TSGS#23(04)0184**
Meeting #23, Phoenix, USA, 15 - 18 March 2004

joint-API-group (Parlay, ETSI Project OSA, 3GPP TSG_CN WG5) **N5-040123**
Meeting #26, Atlanta, GA, USA, 16-20 February 2004 *CN5 Email approved on March 12*

Title: **LS on Clarifications concerning OSA High Availability discussion**
Response to: **N/A**
Release: **Release 6**
Work Item: **OSA3**

Source: **CN5**
To: **SA**
cc: **SA1**

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Attachments: None

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1. Overall Description:

This Liaison Statement intends to clarify a number of issues concerning the support for High Availability (HA) in the OSA Application Programming Interfaces (APIs). The response from CN5 is based on the request for support received from SA #22. CN5 has considered the HA requirement text as reflected in S1-040147, as well as the main issues in this discussion like interoperability implications, the extent of the current OSA HA support, etc..

The text in S1-040147 reads as follows:

An SA1 CR (S1-031232) on "High availability for OSA" was discussed in the latest SA plenary meeting. It was expressed that the requirement was not clearly understood and it was sent to CN5 for advice.

SA1 has now discussed and clarified this requirement in the attached CR (S1-040241) and kindly asks CN5 to investigate whether this requirement is already supported and, if it is not, to implement it in Rel-6.

The requirement text as approved by S1 (see S1-040241 that is attached to S1-040147) reads as follows:

OSA shall allow Service Capability Features to communicate with backup instances of an application in the case where the primary application instance is not responding. This shall be possible also when the primary and backup instances of the application are physically located in different locations

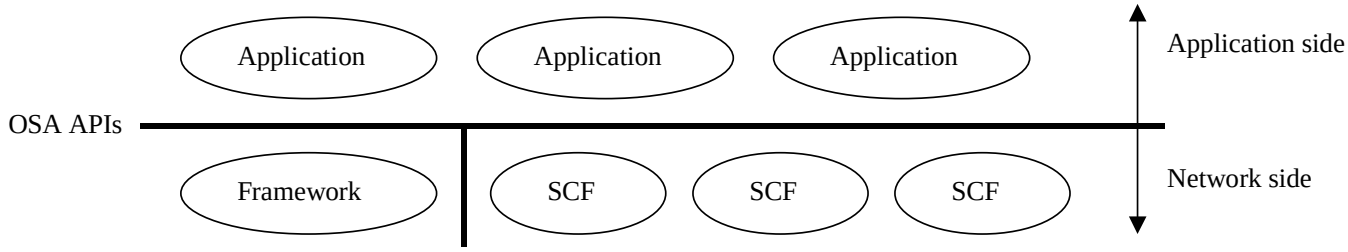
This LS from CN5 will address the following three questions:

- How is High Availability currently supported in the OSA APIs?
- What does it mean to support High Availability at OSA API level?
- What does "Interoperability Issue" mean in OSA, for High Availability?

For each of these questions the LS will outline whether there exists consensus within CN5 on the issue or not.

How is High Availability (HA) currently supported in the OSA APIs?

OSA distinguishes three types of entities in its architecture: the Framework, the Service Capability Features (SCFs) and the Applications. The Framework and the SCFs are on the network side in the OSA architecture. HA is defined as reducing the risk of service outage through protecting against unexpected failures.



The OSA specifications currently support one standardised API-based mechanism to support High Availability. This mechanism has only been defined for a few of the OSA features (e.g. Call Control) and not for all the OSA features. The OSA requirement in S1-040147 can be summarised as a proposal to complete the OSA API support for HA to make it available for other OSA features as well.

Apart from this API-level support, OSA has basically assumed until now that HA should be realised either by a Middleware (i.e. on a level below the OSA APIs) or by a Vendor Specific solution (i.e. HA realised within an SCF, Framework and/or Application, invisible at the API). There is however no consensus in CN5 that a Middleware or Vendor Specific solution for High Availability is guaranteed to ensure the interoperability between Application, Framework and SCF.

What does it mean to support High Availability at OSA API level?

OSA can be regarded as the collection of a set of APIs plus associated behaviour behind the APIs. This means that OSA is more than only a set of APIs. As in all standards, some behaviour description is needed in order to ensure interoperability. However, in order to avoid over-specification and avoid limitation of vendor differentiation, the specification of required behaviour is kept to a minimum. An example of standardised behaviour is the Call Control state model, specifying how an OSA Call Control SCF is supposed to react to particular methods invoked on the API. An example where standardisation of behaviour would go too far is system performance, e.g. the maximum number of supported call control objects.

CN5 currently has the discussion if OSA implementations can be fully interoperable if High Availability support is not defined in the OSA specifications on API level (with associated behaviour), but instead completely left to the interpretation of individual vendors. Some vendors argue that High Availability can be solved within an OSA entity and that the implementation can therefore be kept invisible to an OSA entity on the other side of the API, both in terms of API methods and in terms of behaviour. Other vendors argue that interoperability between OSA entities can only be guaranteed if some API methods and associated behaviour are standardised.

At present within CN5, *no* consensus exists on whether High Availability should be supported at API level (visible at API level with API methods and/or behaviour), or not. A number of CN5 member companies wish to complete the specification of OSA API level High Availability features, and a number of member companies wish to see no further specification and see a purely middleware or vendor specific solution as suitable for the OSA specification. There *is* however agreement on the following:

- interoperability (IOP) is a must for the OSA APIs; any solution that endangers interoperability is not acceptable.
- in standards there is a balance between what to specify and what not. Over-standardizing limits vendor differentiation and thus stifles the richness of technical solutions available for operators.
- the semantics describing how OSA entities need to behave upon recovery from failure, need to be improved. Further analysis in CN5 might result in modified API signatures for enableNotifications, callAborted etc

What does "Interoperability Issue" mean in OSA, for High Availability?

Any capability that is provided in a vendor dependent way may present a risk to interoperability, and thus needs to be thoroughly checked.

As explained before, some CN5 delegates believe that OSA High Availability support in an interoperable way can rely on vendor specific or middleware based solutions, while other delegates do not share this view and believe that the OSA specifications must provide suitable API High Availability support in order to achieve this.

In completing the OSA specification of an API-based solution for High Availability, OSA does not mandate the use of such an API-based solution, nor prevent vendors from alternative approaches to achieve HA within their products

Summary

This LS intended to provide a response to some of the questions raised at TSG SA#22. In CN5 there have been, and continue to be, discussions on the support of High Availability in OSA. There are two general opposing opinions, i.e. High Availability support visible at API level versus not visible at API level. It is fair to state that no consensus exists at present in CN5 on this particular topic.

2. Actions:

No action required.

3. Date of Next CN5 Meetings:

TITLE	TYPE	DATES	LOCATION	CTRY
3GPPCN5#27	WG	10 - 14 May 2004	Miami, FLA	US
3GPPCN5#28	WG	9 - 13 Aug 2004	Piscataway, NJ	US
3GPPCN5#29	WG	1 - 5 Nov 2004	TBD	EU