ITU - Telecommunication Standardization Sector **Temporary Document L25-E**

STUDY GROUP 10 **Original: English**

Lutterworth, 97.10.14 – 97.10.16

Question: 9

SOURCE: RAPPORTEUR

TITLE: MINUTES OF QUESTION 9 MEETING

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Agenda

Agenda and Schedule Expert Meeting Q9 Lutterworth October 14. - 16. 1997

Time	*am/pm*	*Topic*	*Contributions*
Tuesday 14	AM	Registration of contributions and participants. Formal Semantics	L9, 17, 18, 20
Tuesday 14	PM	Decomposition	L5, 7, 14
Wednesday 15	AM	Joint session with Q6 SDL-2000 formal semantics, data, CIF, Method	L16, 19, 22, 24
Wednesday 15	PM	Control Logic	L13, 16, 19
Thursday 16	AM	General Maintenance and miscellaneous	L4, 8, 12, 15, 21, 23
Thursday 16	PM	Summary and Minutes	

List of Participants

Name	*Institution (member)*	*E-mail address*
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Formal Semantics

The session on formal semantics was chaired by the Associate Rapporteur for Formal Semantics, Sjouke Mauw, Eindhoven University of Technology.

TD-L20 A hierarchy of communication models for Message Sequence Charts

This contribution, which actually is a paper to be presented at Forte ’97 was presented by the associate rapporteur. It was felt that the contribution gave new insight into the use of MSC and of the choices of implementation satisfying a given MSC.

The contribution also gave background for later discussions on the proposed architectural notation (L14).

TD-L9 Semantics of dangling events

There was no definite agreement on the interpretation of dangling message events (i.e. dangling input or output). While the Rapporteur argued that lost and found messages could be used as equivalents of incomplete messages, the opposite position was taken by most of the other participants. The ongoing work on the formal semantics also takes the latter position. No definite agreement was reached regarding whether incomplete messages should be sought to be disallowed.

The historical suggestion of “MSC with a direction” was also brought into the discussion as a methodological approach to the problematic example in the contribution. This specific approach was not discussed in any greater length.

Agreement:

1. there should be no syntactic restrictions imposed on ordering of timer events
2. there is a need to supplement the graphical grammar with a timer instance identifier

Actions:

1. Contribution to the next meeting on removing all syntactic requirements related to dangling events (Rapporteur)
2. Initiate discussion on MSC Exploder (Rapporteur)

TD-L17 Semantics of disruption and interrupt

The diversity of the operator interpretations was demonstrated. The group agreed that the operations seemed desirable, but also that no solution was readily at hand.

Actions:

1. Contributions to the next meeting welcomed to show usage of these operations. (All)

TD-L18 Comments on Recommendation Z.120

A number of questions were raised because of the work on Annex B for MSC-96. Some of these issues were agreed directly and some would seek their resolution throught the ongoing semantics work.

Agreements:

1. Change: Remove syntactic requirement on creation that a created instance has to have the kind 'process'.
2. Clarification: Createline should also be allowed to have a downward slope.
3. Corrections: Adding syntax requirement that lost and found messages should go to existing (defined) instances if the lost/found messages specify a target/source instance.

Actions:

1. Contribution to next meeting describing the implementation of the agreements (Rapporteur).

Decomposition

The session on decomposition was chaired by the Rapporteur.

TD-L5 Createline and general order interfaces for instance decomposition

It was recognized that creation could reasonably connect to the environment and that general order relations pose some more problems associated with decomposing instances.

Agreements:

1. Gates for create should be introduced both for "output" (creation event) and "input" (the created instance).
2. Actual gates for messages and general order relations should be introduced on instances which are decomposed to define the unambiguous mapping of the decomposition diagram.

Actions:

1. Contribution for the next meeting to show the necessary modifications to implement the agreements on create-gates and actual gates on instances. (Ass. Rapp. Maintenance).

TD-L7 Global Conditions and instance decomposition

The group had to recognize that conditions are still complicated to understand in full. The notion of "strong global conditions" was suggested with halfhearted support. The question on when a condition is global remains unresolved. What it means that two conditions are "equal" is also unclear. Even the accurate naming convention concerning conditions was only partly recognized by the participants.

The question on conditions is also very much related to the question of continuations and guards covered in L13.

Actions:

1. Contribution on conditions for the next meeting which tries to resolve all issues involving this concept (Rapporteur)
2. The issue of conditions should be discussed on the MSC e-mail exploder (initiated by Rapporteur)

TD-L14 MSC architecture

The group applauded the thorough presentation of the field and that not only one solution was presented. Still the group was reluctant to accepting right away the inclusion of yet another kind of diagram into MSC. The motivation for having an architecture description associated with the MSC document was recognized, but the penalty of extending the language considerably prevented the immediate acceptance.

Given that an architecture description should be associated with the MSC document, it was unclear whether this should be

- a pure visualization of the interaction in the MSC document,
- a restrictive description of the communication, or
- a description containing implementation oriented architectural information such as specifying communication models as defined in L20.

The group wanted that future work should focus on the last proposed solution of the contribution which advocates a MSC-specific architecture description. The reasons for this was to preserve the strong independence from SDL. It is possible that the MSC-specific architecture could take the form of requirements to an architecture specification language such that any existing language adhering to these requirements could be used for the architecture description.

Actions:

1. Gather empirics on how architecture descriptions (through any means) and MSC documents are developed together (All).
2. Contribution which works on the last solution of the L14 (France Telecom).

Joint Q.6/Q.9 Meeting

This session was co-chaired by the Q6 Rapporteur and the Q9 Rapporteur. The minutes from this session were taken by Anders Ek, Telelogic.

Time/Performance Modelling (TDL620)

Andreas Mitschele-Thiel presented various aspects of performance modelling in the context of SDL and MSC. The meeting agrees that the area is very interesting and strongly encourages further work. Andreas agreed to investigate if he can take the role as associated rapporteur for this issue.

Data in MSC

Sjouke Mauw presented TDL19 (‘A note on MSC and data’).

Paul Baker presented TDL16 (‘MSC and data’).

SG 11 Liaison Statement (TDL606)

Rick Reed presented TDL606/TDL22 ('Liaison Statement: Use of MSC/SDL'). It was agreed that a reply is not needed, but Q.6/10 and Q.9/10 rapporteurs and experts should try to actively work together with experts in SG 11 and where possible arrange co-ordinated meetings. However, it was thought that the earliest such a co-ordinated arrangements may be possible are March 1998 (with SG10) or May 1998 (with SG11).

Formal Semantics Rapporteur(TDL 622, TDL627)

Rick Reed informed the meeting that Prof. Dr. Reinhard Gotzhein from the University of Kaiserslautern might be interested in working with the formal definition of SDL. The view was expressed that a new formal semantics should be based on a labelled transition system. It was agreed that Rick Reed is to co-ordinate with Sjouke Mauw to refine the requirements and make these more public. During the meeting a further communication (TDL627) was received from Dr. Gotzhein and this was distributed for information.

Methodology

Philip Leblanc was proposed as associate rapporteur for methodology covering both SDL and MSC. The meeting agreed that this is a good proposal.

Control Logic

This session was chaired by the Rapporteur. From here the minutes are again made by the Q9 Rapporteur.

TD-L13 Continuations and connected operands of interdependent expressions

The distinction between vertical and horizontal dependency was appreciated as agreement was easily reached regarding vertical dependency while more work is needed on horizontal dependency.

It was recognized that users feel the urgent need for continuations of alternative operands in subsequent alternative expressions. This need was also discussed during the development of MSC-96, but the gravity of the problem was not recognized at that point in time.

The example on horizontal dependency was too complicated for the experts and simpler and more convincing examples should be provided. The issue of non-local choices should be considered. Furthermore it is necessary to consider how this continuation concept affects other expressions than alternatives.

Actions:

1. Contribution to define the necessary modifications of Z.120 to incorporate alternative continuations for the possible upcoming addendum (Rapporteur)
2. Contribution to clarify the notion of horizontal dependency. (Rapporteur)

TD-L16 (MSC with data) and TD-L19 (A Note on MSC and data)

These contributions had been presented at some length during the joint meeting, but more MSC specific and detailed matters were considered here. The discussion was mainly about how the interface to the specific data specification language should appear and what it should contain. It was

argued that it is conceivable that the interface could be on a spectrum of specification from a full MSC-specific data language to a plain syntax specification. While the Motorola approach was close to the latter extreme, it was felt that there is a potential gain from putting more into the interface without loosing the genericity of the concept.

Agreements:

1. The following three questions will guide the discussions on the extensions of MSC with data:
    - At which place in the language might data be useful?
    - Which extensions of MSC are natural after introducing data in MSC?
    - How can we set up the recommendation in such a way that the actual data language can be considered as a parameter, which may be easily instantiated with any formal data language?
2. It is highly desirable that the ass. Rapp. For Semantics and Motorola keep in close contact during the elaboration of these matters.

Actions:

1. Contribution for next meeting on possible extending the MSC-specific extensions to give more analysis power to MSC-2000 on message parameters (Motorola)
2. Discussion initiated on the MSC exploder about the usage areas of data in MSC-2000 (Ass. Rapp. For Semantics)
3. Contribution for next meeting on a more general generic approach to data concepts in MSC-2000 (Ass. Rapp. For Semantics)

TD-L21 Moderated E-mail report from MSC exploder

The part on UML “threads of control” was discussed following a presentation from Ass. Rapp. For Semantics and supported by Ass. Rapp. For Maintenance.

It was pointed out that the UML notation made the semantic distinction between remote procedure calls and normal asynchronous messages since an instance which has called a remote procedure cannot perform normal message passing (input or output), BUT it may perform a remote procedure invoked from another instance (?) The group was reluctant to accepting this flexibility for MSC.

Actions:

1. Contribution for next meeting for an MSC extensions built on the UML mechanism and our discussions on a notation for remote procedure calls. (Ass. Rapp. For Maintenance)

General Maintenance

This session was chaired by the Rapporteur.

TD-L8 Unification of Inline Expressions and References / Create and Stop

It was recognized that creation was not treated equally in reference expressions and inline expressions and that a harmonization should be sought. Still it was pointed out that harmonization should take into account the whole spectrum of problems concerning create and stop. It was

recognized that creation without termination is quite reasonable and that stop without creation is equally feasible. If a created instance has no termination in a given MSC, it is reasonable that continuation of this MSC is legal.

Actions:

1. Contribution to next meeting on the more general problems concerning create and stop (Ass. Rapp. For Maintenance)

TD-L4 Improved graphical syntax for generalized ordering

Following a jokingly discussion, it appeared that a full agreement could not be reached concerning the graphical ambiguity of general ordering relations.

There was resistance against distinguishing between “dotted” and “dashed” lines.

Agreements:

1. More examples needed for illustration of the different graphics. Dotted general ordering relations should be connected to dashed coregions or to dashed createlines.
2. A solution would most probably be found either through the solution to dot a general order relation and/or to make the output event more explicit (i.e. with more extent).

Actions:

1. Contribution on illustrations (Ass. Rapp. For Maintenance)

TD-L12 Substitution of timers and conditions

The group agreed with the contribution.

Actions:

1. This contribution will be incorporated into the Master List of Corrections (Rapporteur)

TD-L15 Inclusion of text definition/area in HMSC

It was recognized that text definitions are not present in the textual grammar of HMSCs and that text area is not present in the graphical grammar of HMSCs.

Agreements:

1.

Graphical grammar.

Change the definition of <mscexpr area> to

<mscexpr area> ::= {<text layer> <start area> <node expression area>* <hmsc end area>}

Textual grammar.

Change the definition of <msc expression> to

<msc expression> := <start> {<node expression> | <text definition>}*

2. The proposed correction of the definition of <inf natural> was accepted.

Actions:

1. These changes will be put in the Master List of Corrections (Rapporteur).

TD-L21 Moderated E-mails from the MSC Exploder

The group did not like the simple compilation of e-mails and wanted that contributions should be submitted in a more "formal" way by declaring them as intended for an upcoming meeting. Such contributions on the E-mail exploder should be brought to the meeting by the Rapporteur.

Agreements:

1. Only items declared as "contributions" for the upcoming MSC meeting should be brought to the meeting from the exploder list by the Rapporteur.
2. Small corrections may be issued directly to the Rapporteur, and it may be included in the Master List of Corrections.
3. All corrections of the Master List of Corrections should be made explicit by the use of change-bars or similar typographical features.

Actions:

1. Provide a more detailed template for contributions (Telelogic).

TD-L23 Partial Order formulation

Agreements:

1. The matter of defining "strict partial order" should be decided offline.
2. The used technical concepts should be explained in the paragraph.

Actions:

1. Contribution for improving the paragraph of the Recommendation according to the agreements. (Ass. Rapp. For Semantics).

Miscellaneous

An oral contribution was given regarding the lack of mechanisms to page HMSCs.

Actions:

1. Well motivated contribution on paging of HMSCs should appear for the next meeting (Telelogic).

Next meeting

The group did not think another meeting is required before the next Geneva meeting in March 1998.

The Annex B will be reviewed by the group and Motorola UK has offered to make a very thorough review.