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Title: ETSI/AMR Noise Suppression Selection Host Laboratory Crosscheck Procedures

Source*: ARCON Corporation, COMSAT Laboratories

Summary

This document presents a description of the crosscheck procedures developed by COMSAT and ARCON for the host laboratory activities in the ETSI/AMR NS Selection tests.

1. Introduction

COMSAT Laboratories and ARCON Corporation were contracted to perform the host laboratory function for the AMR Noise Suppression (NS) Selection Phase. The responsibilities for the host laboratory activity were defined in the AMR NS Subjective Test Plan [1] and in the AMR NS Processing Test Plan [2]. These responsibilities included the development of a set of common crosscheck procedures to improve consistency of the processing performed by both host laboratories and to ensure adherence to the test design by SMG11SQ.

2. Description

The crosscheck procedure was performed in three stages. In the first stage, the pre-processed input material used by the AMR NS candidates was crosschecked. In the second stage, the host laboratory-processed calibration and reference material was crosschecked. In the third stage, the prost-processing and blinding of all the material was crosschecked.

The basic approach followed is illustrated in Figure 1, where either Lab A = ARCON and Lab B = COMSAT or Lab A = COMSAT and Lab B = ARCON. The procedure consisted of one laboratory comparing a sub-set of the processed material for each experiment of the other laboratory, so that every test condition would be probed for consistency between the laboratories and compliance to the test plans. In order to accomplish this, certain talkers and samples were chosen to be produced and exchanged for the smallest necessary amount of speech material to cover every test condition in an experiment, depending on each experiment design.

The use of subsets of the material was justified, as in past exercises, by the use of totally independent systematic procedures by each host laboratory, so that syntax errors would be repeated systematically, and hence easily detectable.

Comparison of the data subsets was performed using a binary file comparison software, such as MS-DOS "`fc /b`" or Unix "`diff`" for each of the files involved.

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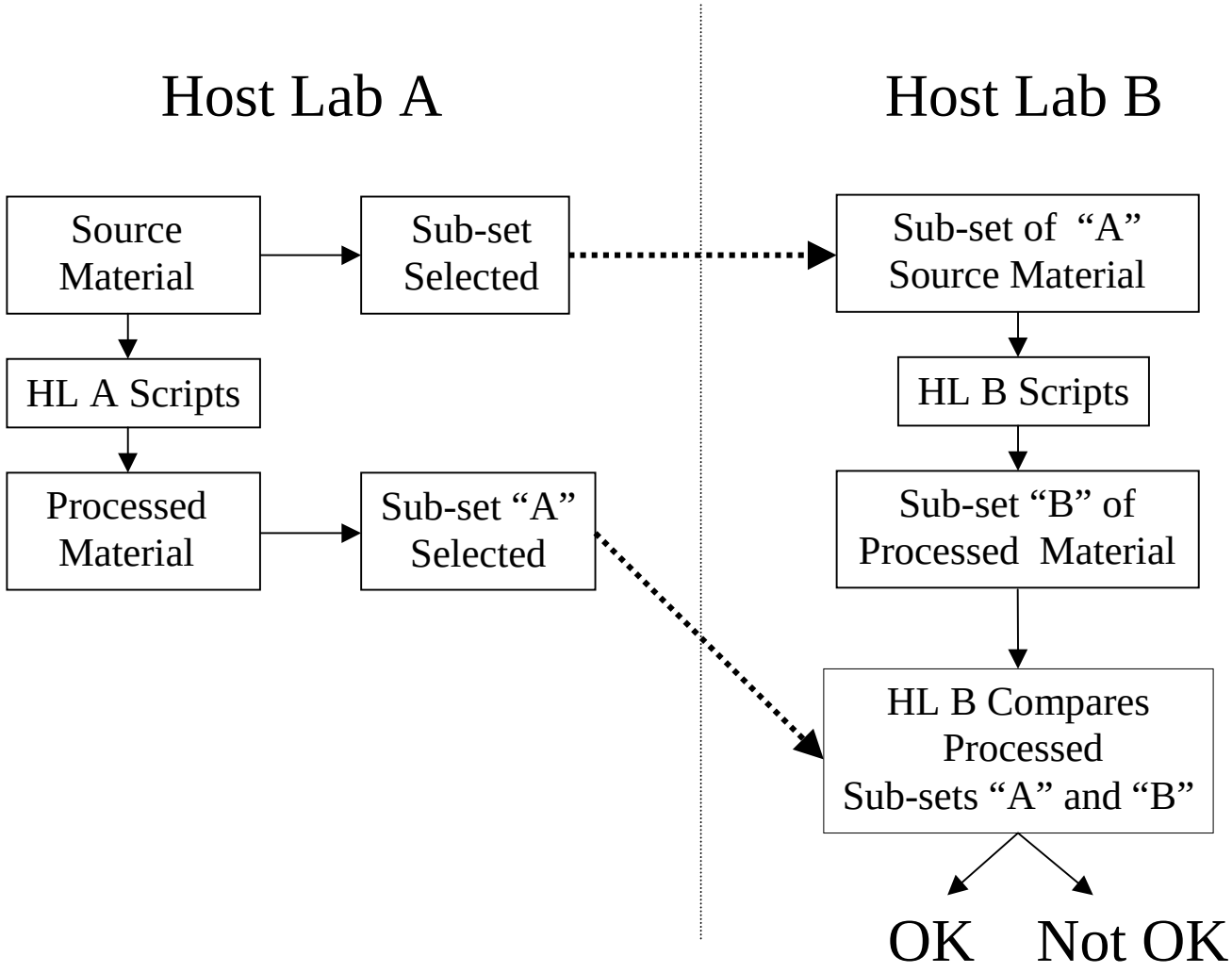

Figure 1
Diagram illustrating crosscheck procedure implemented between ARCON and COMSAT

3. Cross-check material

The assignment of Listening Laboratories to the Host Laboratories is shown in Table 1. Table 2 contains a summary of the speech exchanged between COMSAT and ARCON for the crosscheck procedure.

Table 1:
Assignment of Listening Laboratories to the Host Laboratories

	Host Laboratory	
Experiment	**ARCON(1)**	**COMSAT**
1A	Nortel	COMSAT(2)
2A	ARCON	COMSAT(3)
3A,3B,3C	ARCON	FUB
4A,4B,5A,5B	Nortel	COMSAT(2)
6A,7A	AT&T	AT&T(2)
8A,9A	Nortel	AT&T(4)
10A	ARCON	COMSAT

Notes:
(1) All experiments processed by ARCON were performed in (North-American) English
(2) Test performed in Spanish
(3) Test performed in French
(4) Test performed in Chinese (Mandarin)

Table 2:
List of cross-checked material between COMSAT and ARCON

	ARCON-processed	**COMSAT-processed**
Experiment	**Status**	**Status**
1A	OK	OK
2A	OK	OK
3A	OK	OK
3B	OK	OK
3C	OK	OK
4A	OK	OK
4B	OK	OK
5A	OK	OK
5B	OK	OK
6A	OK	OK
7A	OK	OK
8A	OK	OK
9A	OK	OK
10A	OK	OK

The comparisons performed by ARCON used the MS-DOS `fc/b` command, and the comparisons performed by COMSAT used the Unix `diff` command.

5. Conclusion

COMSAT and ARCON have collaborated to define a comprehensive cross-checking procedure during the host laboratory activities for the AMR Noise Suppression Selection tests.

The host laboratory processing activities were successfully checked by both laboratories,.

The cross-checking procedure contributed to the correction of errors and clarification of unclear points in the test procedure and resulted in processed material that is consistent between the two host laboratories.

References

[1] SMG11SQ, *"Test Plan for the AMR Specification for the AMR-NS Selection Phase"*; Tdoc SMG11 288/99.

[2] SMG11SQ, *"Processing Functions for the GSM AMR Noise Suppression Selection Tests"*; Tdoc SMG11 281R/99