

SHORT TERM SCIENTIFIC MISSION (STSM) SCIENTIFIC REPORT

This report is submitted for approval by the STSM applicant to the STSM coordinator

Action number: CA15127

STSM title: Classification of approaches, techniques and schemes for resilient IP routing

STSM start and end date: 23/04/2019 to 30/04/2019

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PURPOSE OF THE STSM:

The purpose of this STSM was to work on a classification of approaches, techniques and schemes for resilient IP routing, in general, and on the corresponding book chapter, in particular, with the aim of elaborating a comprehensive classification of resilient IP routing approaches, techniques and schemes, and a suitable structure of the corresponding book chapter presenting it in the most eye-catching manner. This way the STSM contributed towards achieving a major milestone of the COST Action CA15127 “Resilient Communication Services Protecting End-User Applications from Disaster-based Failures (RECODIS)”, in relation to preparing and publishing a book, planned for month 47 of the Action.

DESCRIPTION OF WORK CARRIED OUT DURING THE STSM

The following work was carried out during the STSM:

1. Drafting a comprehensive classification of approaches, techniques and schemes for resilient IP routing.
2. Extending and enhancing the classification under different criteria/features such as domain, scope, protection (sub)type, failure (sub)type, type of routing supported, communications layer(s), overhead, implications on network load, protection efficiency, etc.
3. Subdividing these into separate subgroups such as fast rerouting, multipath routing, hybrid, and others.
4. Further elaboration and enrichment of the classification by the inclusion of multi-layer and multi-domain approaches, techniques and schemes for resilient IP routing.
5. Reaching a final composition of the classification of approaches, techniques and schemes for resilient IP routing.
6. Agreeing on the final structure of the corresponding chapter of the RECODIS book including the content of the subsections and the comprehensive summary at the end.
7. Preparing the conclusion and the list of references of the book chapter.

DESCRIPTION OF THE MAIN RESULTS OBTAINED

The main results obtained during this STSM could be described as follows:

1. Summarising the state-of-the-art outcomes in the area of resilient IP routing approaches, techniques and schemes with the aim of presenting these in the most attractive way in the

- corresponding chapter 3.1 with a working title “Taxonomy of Schemes for Resilient Routing”, which is currently under preparation within the Working Group 5 of the COST Action RECODIS for its forthcoming book entitled “Guide to Disaster-resilient Communication Networks”, which will be published by Springer in the “Computer Communications and Networks” series in 2020.
2. Coming up with a decent structure and a tutorial-like content of the book chapter reflecting the main purpose of the forthcoming RECODIS book.
 3. Elaboration of a plan for finalizing and completing the book chapter in order to meet the time schedule set for the book’s preparation and publication.

FUTURE COLLABORATIONS (if applicable)

In general, this STSM will enforce the research cooperation between the Budapest University of Technology and Economics (Hungary) and the University of Limerick (Ireland), and may lead to future joint activities of common interest between these two institutions.

In particular, a near-future collaboration with the host was discussed during this STSM as regards working on and preparing a joint review paper for publication e.g. in the “IEEE Communications Surveys & Tutorials” journal, based on the continuation and extension of the collaborative work done during the mission under the umbrella of the COST Action RECODIS. In addition, a long-term collaboration within the IoT area was also considered.