A major activity for the SRIS laboratory for the year 2010 was the organisation of the International Conference ESREL 2010.

ESREL (European Safety and Reliability) is an annual conference series promoted by the European Safety and Reliability Association (ESRA). The conference dates back to 1989 and it has become well established in the international community, attracting a good mix of academics and industry participants presenting and discussing subjects of interest and application across various industries.

The theme of ESREL 2010 was Reliability, Risk and Safety: Back to the Future. The Conference covered a number of topics within reliability, risk and safety, including risk and reliability analysis methods, maintenance optimisation, human factors, risk management, etc. The application areas ranged from nuclear engineering, oil and gas industry, electrical and civil engineering to information technology and communication, security, transportation, health and medicine or critical infrastructures. Significant consideration was given also to the societal factors influencing the use of reliability and risk assessment methods. Integral demonstrations of the use of risk analysis and safety assessment were provided in many practical applications concerning major technological systems and structures.

The ESREL Conference came for the second time to Greece. In 1996 the conference was on the Island of Crete. The Island of Rhodes in Greece has been selected as the venue for the ESREL 2010. The return of ESREL to Greece reflects more than two millennia of attempts to come to grips with the notion of probability and risk. Already Archimedes occupied himself with the question of how many possibilities there were to lay out 14 pieces of a puzzle called Stomachion. It is conjectured that this effort marked the first attempt to theoretical foundation of combinatorics. Since then combinatorial analysis found its way into the analysis of probabilities and risk from which quantified risk analysis developed. Conference participants did not only look at the latest developments, but also searched for the meaning of the ancestral heritage for today’s world wide problem of managing risk.

Three hundred forty six (346) participants from 32 countries spanning 4 continents attended ESREL 2010. The Conference program included 303 papers. They were presented in 86 sessions in six parallel trails spanning four days. Originally, about 540 abstracts were submitted. An International Technical Programme Committee consisting of 45 members reviewed the submitted work in two stages first the abstracts and then the full papers; 303 have been accepted and included in Conference Proceedings.

Prof. George Apostolakis of MIT and currently Commissioner at the US Nuclear Regulatory Commission gave the opening speech entitled Managing Uncertainties in the Regulation of Nuclear Facilities: The issue of Unknown Unknowns.

The SRISL staff was very actively involved both with the preparation of the Technical Program, as well as, with the local organisation issues.