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# Standardization in research and innovation projects

## Success story: new technologies

### SafeLife-X:

The SafeLife-X project (Safe Life Extension management of aged infrastructures networks and industrial plant) is a 2 year FP7 project (September 2013 - August 2015) that intends to improve ageing management for infrastructure networks and industrial plants, including roads, railways, tunnels and bridges, so that their availability is maximised and their management cost effective. SafeLife-X will also pursue the development of a European Standard (EN) on a Risk-Based Inspection Framework. SafeLife-X will build cost-effective solutions to handle the problem of infrastructures ageing in the next 10 years (2015-2025) by providing specifications for new Research Development Innovation (RDI) projects (Strategic Research Agenda/Roadmap) and a catalogue of best practices including Cost-Benefit analysis.

<http://www.safelife-x.eu-vri.eu>

### THE PROJECT



The importance of aging of infrastructures, networks and industrial plants is continuously increasing because of (a) the need to continue operation of these infrastructures, networks and plants beyond their design life-time, (b) the need to operate under changed conditions and (c) the increased role of existing plants in the optimized ("smart") supply and utility networks of the future, e.g. as fall-back supply. The World Economic Forum and OECD indicate that the "underinvestment in infrastructures" is one of the most important risks for society.

SafeLife-X will contribute to find a consensus on aging management including potential cascading and/or ripple effects. It will, thus, satisfy the demand within various industrial sectors, help match the EU Grand Challenges and the EU-2020 Strategy, and achieve the goals of main stakeholders (e.g. EC, OECD, ECTP, ETPIS...). Besides, the issue of aging will be explored as an opportunity for new technologies, services and businesses primarily in the service and construction sectors.

### STANDARDS: A SOLUTION FOR MARKET UPTAKE

The project capitalizes on best practices of modelling, asset integrity management, decision making, and cost-benefit analysis. It will be applicable primarily -but not exclusively- to oil & gas, petrochemical, chemical, power, and steel industry. Having a "Risk-Based Inspection Framework" in the form of a standard will not only help customers on the market to find more "standardized" approaches for risk based decisions, but will also show a more adaptive analysis path compared to other global solutions.

The new European Standard should ensure that defined and accepted levels of risk related to safety, health, environment and business/production/operation are achieved by using resource-efficient and risk-based (risk-informed) methods of inspection. Risk-Based Inspection Procedures concern for example the link to maintenance and life management for plants and safety devices.

 The standardization activities have shown that thanks to European support it is possible to cover the full range from the research idea to a full-scale standard (EN). 

Professor Aleksandar Jovanovic, SafeLife-X coordinator.

## HOW WILL THE STANDARDIZATION WORK BE DEVELOPED?

The basis for standardization activities on Risk-Based Inspection is the CEN CWA 15740:2008 document. This CWA, developed in the EU FP6 project RIMAP, has specified the essential elements for risk based assessment of industrial assets according to the RIMAP (Risk-based Inspection and Maintenance Procedures for European Industry) approach. Within SafeLife-X, this pre-standardization document will be proposed as a European Standard, currently in the preparation phase as a Risk-Based Inspection Framework (RBIF).

The RBIF will be developed within the CEN Technical Committee (TC) 319 dedicated to maintenance, under a working group dedicated to RBI (WG12).

## BENEFITS OF LINKING WITH STANDARDIZATION

Standardization allows cross fertilization and awareness rising about methods and tools to manage aging of infrastructures. Standardization is an important tool to go from a fragmented to a harmonized approach.

It is particularly important to align practices on a recognized consensus especially to extend the life-time of infrastructures and industrial plants, which potentially pose major risks. This consensus is expressed in standards.

## LONG-TERM EXPECTED IMPACT

The SafeLife-X project and the new European Standard will help Europe deal better with challenges posed to the maintenance and management of aging infrastructures, networks and plants. In particular, those related to globalization and related competitive pressures which have resulted in rapid changes across industry and society. New trends in maintenance have increased the requirements applicable to infrastructures and industrial plants (for instance Data-Driven Maintenance Management and enhanced tracking and reporting systems; Mobile and unmanned solutions; "Green" certifications, which need reliable maintenance and facility data; increasingly complex record-keeping for regulatory Compliance).

These requirements represent a particular challenge for aged infrastructures, networks and plants. Especially in these cases, it will be important to find the right balance between economical aspects, reactivity, and durability and efficiency of the assets. The standard brings a frame within which this balance can be addressed.



Standards will strongly contribute to thrust in the delicate debate about the life-time of aged infrastructures and industrial plants.

Professor Aleksandar Jovanovic, SafeLife-X coordinator.

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Every project is different. The CEN-CENELEC Research Helpdesk can provide you with advice on how to include standardization in your project. Please feel free to contact us!

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