SIIV Winter School 2022 - Pavement Assessment and management towards Smart and Safer mobility ROUND TABLE



ANAS vision:

transition from traditional civil work to interactive technological infrastructure



Introduction Who is ANAS and what are its network' needs?



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EXPERIMENTAL LABORATORY CENTER

R&D of innovative solutions





GRUPPO ES ITALIAN







38.000 km (2018-2022) of paved lanes



APPROACH TO MAINTENANCE ACTIVITIES







ITECH & AI FOR MANAGING MAINTENANCE ACTIVITIES





TECHNOLOGICAL & DIGITAL SUPPORT





MONITORING



INTER CONNECTIONS



ITECH & AI FOR MANAGING MAINTENANCE ACTIVITIES PREDICTIVE MAINTENANCE TECHNOLOGICAL & DIGITAL SUPPORT MATERIALS & EQUIPMENTS URA DRENANTE in C.B. (s=4 cm BINDER in C.B. (s=6 cm) ASE in Ready To Mix (s=10 Connector Smart a AZIONE A CALCE + CEMENTO SOTTOFONDO anas anas **GRUPPO FS ITALIANI**

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RESEARCH & DEVELOPMENT

<u>RECYCLING</u>: re-use of high amount of RAP for the production of new bituminous mixtures (COLD RECYCLING)

<u>CEMENTITIOUS FILLER</u>: study on an innovative cement-based material that can substitute traditional aspahlt mixtures



LOW-NOISE EMISSION PAVEMENTS: study the effect of asphalt rubber both through DRY and WET application

DURABILITY: mixtures with high durability performance through the use of polimeric compound, nano-polymers, asphalt rubber ...

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PLASTICS: reuse of "light plastics" in the production of hot bituminous mixtures



OPEN-LOOP MATERIALS: mixtures made exclusively with artificial and recycled materials (derived from industrial processes, such as: milled, basalt fibers, sands deriving from the waste-to-energy processes of MSW, grits deriving from the production of steel and recycled plastic compounds)

...... Smart materials, sensors, DSS (Decision Support System)????



iTECH & AI FOR MANAGING MAINTENANCE ACTIVITIES





TECHNOLOGICAL & DIGITAL SUPPORT

MATERIALS & EQUIPMENTS



MONITORING







DATA ELABORATION & ANALYSIS

SIGMA Software & HIGH PERFORMANCE EQUIPMENT









HIGH-PERFORMANCE EQUIPMENT









ITECH & AI PROJECTS

GRUPPO FS ITALIANE



iTECH & AI PROJECTS

HIGHLIGHTS AT THE BASIS OF THE NEW EUROPEAN POLICY 2020-2027







"connections" of real and intangible infrastructures, both indispensable for the new geography of living, market, people and vehicles flows, and for improving the accessibility to cities, ports, airports, etc ...







Future works



Work in progress



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Model for the planning and management of maintenance interventions (RAM System) \rightarrow allows to start a radical transformation of the management and surveillance system of the various network assets

The RAM model can be summarized in a 4-step process:





OPTIMAL TECHNICAL AND ECONOMIC PLANNING OF OVERALL SCHEDULED MAINTENANCE INTERVENTIONS FOR ALL ASSETS

Thank you for your attention

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