The Evolution of the Implementation of Cold Spray Technology across various Commercial Applications since the 1990’s
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Cold spray technology emerged as a practical technology in the 1980’s from the Russian Academy of Sciences in Novosibirsk. Since year 2000, the applicability of cold spray technology has slowly migrated from the R&D lab to commercial applications across several industries. Today, the implementation of this technology into volume production starts to flourish in applications beyond repair, restoration, and remanufacturing. Although the Aerospace industry continues to lead the commercial implementation of cold spraying for non-structural and some structural restoration, other higher volume production industry segments appear to start benefiting from the unique ability to consolidate metals powders in the solid state and at low temperatures for new and novel products. These novel implementations echo the implementation of some thermal spray processes into volume automotive production, which demands cost-effectiveness, reliability, repeatability, maintainability, and productivity.

Bio
Dr. Villafuerte is currently Corporate Technology Strategist at Centerline Windsor Ltd, one of North America’s premier designers and manufacturers of production automation for automotive fabrication, welding equipment, and cold spray systems. Recognized by the 2011-2016 Windsor-Essex Business Excellence Awards and 2013-2019 Canada best managed companies awards.

Dr. Villafuerte is a holder of Ph.D. and Master Degrees in mechanical & materials engineering from the University of Waterloo, Canada. He has over 25 years experience in materials science and processes. For the past 18 years, He has devoted to the promotion of cold spray technology. Prior to Centerline, Dr. Villafuerte worked as senior technical director for Tregaskiss Ltd after his previous appointment as director of technology for the Welding Institute of Canada. Dr. Villafuerte is very active with ASM-TSS, International Thermal Spray Association, American Welding Society, Professional Engineers Ontario, and Canadian funding agencies, serving in various committees and boards. He is the author of over 50 technical publications and regularly presents advances in cold spray technology around the world. Dr. Villafuerte serves as Technical Reviewer for the Canada Natural Sciences and Engineering Research Council, Science Foundation Ireland, as well as referee for a number of professional magazines on Materials Engineering, Corrosion and Coatings Technology. He is currently adjunct professor for the University of Waterloo and the University of Windsor, involved in academic and collaborative research activities with these and other academic institutions.