FINAL PUBLISHABLE SUMMARY

As worldwide, an average of 200 000 people are added to the world food demand each day, this brings the tendency of world's human population to reach 9.2 billion by 2050. The population growth tendency lead to an increase of the food demand worldwide, moreover the efficient and safe food production becomes a prerequisite for building a society capable of feeding the growing population.

With the world population growing at extraordinary rates and the consequent repercussions in the dietary and consumption habits, it is estimated that food production has to be increased at least by 70% in the next 30 years, with the looming threat of a proportional surge of food-borne diseases, which will occur predictably.

This is particularly true for the most striking cause of these outbreaks, to which the food industry did not seem to have found effective counter-measures so far: biofouling, which is the contamination of surfaces with hygienically relevant microorganisms and their eventual development and implementation into biofilms. There is currently not a thorough, effective and integrated solution to eliminate biofouling completely. This has a negative impact both on the economic performances of the enterprises and on their image, affecting product quality and quantity, forcing preventive overdosing of biocides and cleaners, and causing production downtime for cleaning and disinfection cycles. The food industry needs to improve anti-fouling strategies and to effective implement them into the production process.

The coating result of the Cleansurf project is conceived to attack the biofouling through the development of new durable surface coatings to reduce biofilm build-up and facilitate the removal of biofilm and through fine-tuning of the cleaning process to suit the new surfaces.

The CLEANSURF project has developed and tested the coatings with biofilm restraining properties tailor-made for the food industry in order to:

- increase effectiveness and productivity by expanding the cleaning intervals and by decreasing the down-time of production equipment enforced by current cleaning procedures;
- reduce the usage of environmentally harmful chemicals;
- reduce the energy and water consumption. The coating will be an organic/hybrid silane based coating manufactured by the Sol-Gel approach.

The growing of the food production and consumption represents a huge market opportunity for European companies going into global markets with a competitive edge achieved also through the CLEANSURF innovation.