Background information

Meeting on coupling dynamic sensing and dynamic control for process water retrieval from (rest)water resources (WINSPEC).

Process Industry has interest in better process measurement and control to be capable to control the process to produce an assured, wanted, sufficient product of constant quality even in case of an in time fluctuating feed stream (varying in physical properties, composition and/or size). This leads to less off-spec production, higher energy efficiency, better use of raw material materials and thus higher profit and better compliance with sustainability demands. In recent years there has been interest to incorporate the possibilities offered by the internet of things and capabilities for a better human – machine interface by using software and intelligent devices (Industry 4.0).

For process industry it is essential that the effort (costs) for retrieval and collection of additional process information (sensing) is effectively translated into an improved process offering sufficient additional measurable. Recently, valuable progress has been made by connecting dynamic sensing with dynamic control in the process industry. As an example, at present a successful innovation project is running in which is different types of process industry (Bulk, Fine Chemicals, Food) that cooperate with knowledge institutes (TU Eindhoven, RU Nijmegen) and SMEs (like providers of control software for process lines) to develop a system by which such adequate coupling between dynamic sensing and dynamic steering is realized. As part of the deliverables, the system developed in the project will be implemented in the operation of existing process lines of industrial partners involved (the INSPEC project of ISPT, the process technology innovation platform in the Netherlands, led by Jeroen Jansen of RU Nijmegen). The project will finalize in next 2-3 years.

Sessions with relevant stakeholders revealed a growing interest from process industry in process water security and quality(e.g. how to deal appropriately with (increasing) water "stress").

Intensive collaboration of process industry with knowledge providers and relevant SMEs may be able to alleviate the upcoming industrial water "stress" in the Netherlands. For instance through the development of water circularity. Many options for solutions may be offered by coupling dynamic sensing with dynamic process control.

For this reason KWR – the water research institute - and COAST (the community of innovation for analytical science and technology) will organize a meeting with the theme 'Dynamic sensing and control for process water retrieval'.

The meeting sets out to explore possibilities for collaboration in this field including ideation definition of ambitions and nucleation of partnerships. The intention is to prepare (a) pre-proposal(s) for upcoming funding opportunities (e.g. related to climate and circularity).