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(71) Applicant: **GEA WESTFALIA SEPARATOR GROUP GMBH** [DE/DE]; Werner-Habig-Str. 1, 59302 Oelde (DE).

(72) Inventors: **WITTKAEMPER, Lars**; Catharina-Müller-Str. 5, 48149 Münster (DE). **VEER, Thomas**; An der Gräfte 10, 49832 Beesten (DE). **BUSSMANN, Daniel**; Mückenmarkt 30, 48739 Legden (DE). **IRRGANG, Sven**; Müselerstr. 15, 59302 Oelde (DE).

(74) Agent: **BARDEHLE PAGENBERG PARTNERSCHAFT MBB PATENTANWÄLTE, RECHTSANWÄLTE**; Prinzregentenplatz 7, 81675 München (DE).

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(54) Title: METHOD AND SYSTEM FOR PREDICTING THE QUALITY OF A CLEANING-IN-PLACE CYCLE OF AN INDUSTRIAL PRODUCTION LINE

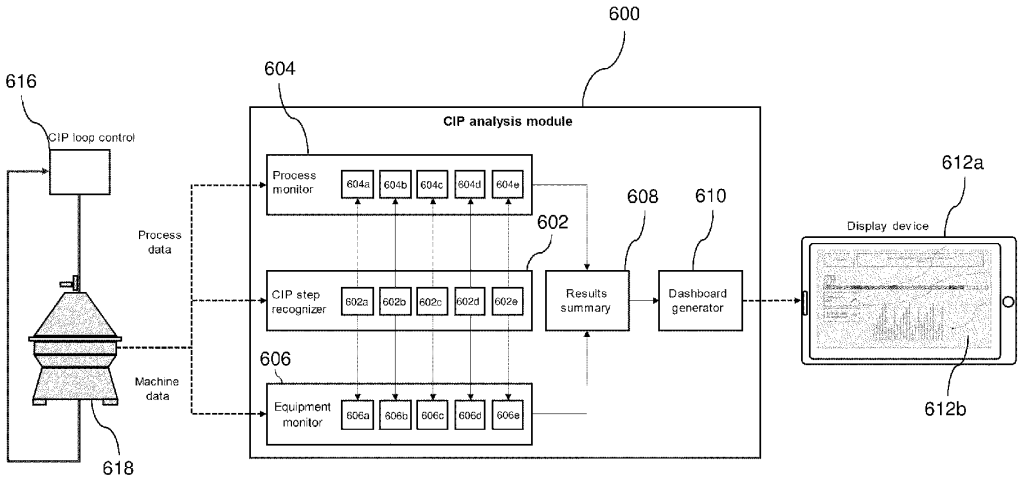


Fig. 6

(57) Abstract: The present disclosure relates to a computer-implemented method for predicting the quality of a Cleaning-in-Place (CIP) cycle of an industrial production line comprising at least one equipment and at least one CIP station, the method comprising the steps of: executing, by the CIP station, the CIP cycle; identifying one or more CIP steps of the CIP cycle; selecting, for each of the identified one or more CIP steps, a trained process-specific machine learning model associated with the CIP station according to the identified one or more CIP steps; passing one or more CIP station-specific parameters to the trained process-specific machine learning model; and predicting the quality of the CIP cycle based on the one or more CIP station-specific parameters, wherein the quality is reflected by an output of each of the trained process-specific machine learning models. In addition, the present disclosure relates to a corresponding control computing system, to an industrial production line comprising or communicatively coupled to at least one control computing system, to computer-implemented methods for training a process-specific and an equipment-specific machine learning model, a trained

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machine learning model as well as to corresponding computer programs.