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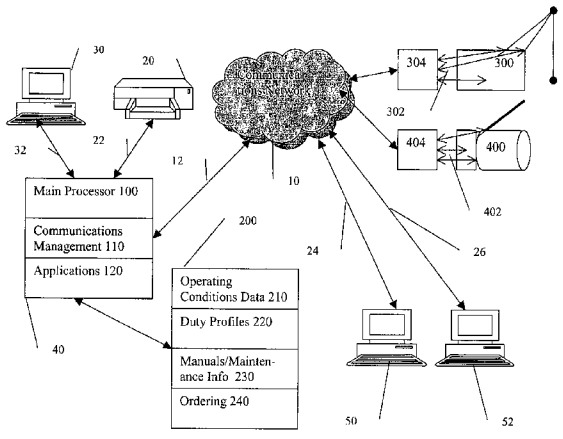
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(54) Title: EQUIPMENT COMPONENT MONITORING AND REPLACEMENT MANAGEMENT SYSTEM



(57) Abstract: A system for managing replacement components for equipment having a plurality of components each with a limited useful life has a computer with a processor. The system includes a computer program module for defining a duty profile comprising a plurality of usage cases for the equipment, each usage case involving two or more of the plurality of components and specified operating conditions assumed to be experienced by the involved components during the execution of each of the usage cases. There are also a computer program module for determining a theoretical useful life for each component involved in a duty profile, the theoretical useful life being based on component useful life data under the specified operating conditions; and sensors for determining and monitoring the occurrence of equipment operation corresponding to a usage case and measuring the actual operating conditions experienced in the operation and the number of such operations. A further computer program module computes an adjusted theoretical useful life for a component that has experienced one or more operations, based on a comparison of actual operating conditions to operating conditions assumed to be experienced in the operation of the usage case.

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