

Claims

[Claim 1] A method for sharing manufacturing data during a manufacturing of an end product to be manufactured during different manufacturing operations comprising assembly of various sub-products or realization of intangible operations, each sub-product or each intangible operation being associated with a respective RFID tag, each RFID tag comprising a RFID identifier identifying the sub-product or the intangible operation and comprising state data on a manufacturing state of the end product, said method comprising:

at each manufacturing operation:

- reading at a local computer coupled to a local machine able to allow assembly of sub-products or realization of intangible operation for said each manufacturing operation, current state data from each of at least two RFID tags involved in the assembly of sub-products or in the realization of an intangible operation for said manufacturing operation, in order to verify whether the current state data are identical or compatible with one another;

- generating new state data from reorganization operations between the read current state data;

- separating the new state data into two separated new state data and associating each separated new state data to a RFID identifier of the at least two RFID tags;

- transmitting each separated new state data to each of the at least two RFID tags;

- storing the separated new state data at a centralized storage device, with the RFID identifier of the respective RFID tag and with an operation identifier corresponding to said manufacturing operation; and

- repeating the previous steps for a next manufacturing operation until the last manufacturing operation to obtain the end product;

wherein the local machine is configured to read the at least two RFID tags, to extract data on the manufacturing state of the end product from the at least two RFID tags and to write new data on the manufacturing state of the end product to the at least two RFID tags; and

at the last manufacturing operation:

- generating a final identifier Id_F associated to the end product;

wherein the centralized storage device is configured to store the RFID identifiers of all RFID tags, the separated new state data of the last manufacturing operation, and the final identifier Id_F .

[Claim 2] The method as claimed in claim 1, wherein the generating step comprises a step of aggregating the current state data of the at least two RFID tags, a step of splitting said current state data, and a step of merging the split data to form the new state data on the manufacturing state of the end product.

10 [Claim 3] The method as claimed in either one of claims 1 and 2, wherein the new state data on the manufacturing state of the end product are distributed between the at least two RFID tags.

[Claim 4] The method as claimed in any one of claims 1 to 3, wherein the state data on the manufacturing state of the end product comprise data selected from a list of the following data:

- one or more plans;
- one or more certificates of conformity;
- one or more instruction sheets;
- one or more manufacturing results.

20 [Claim 5] The method as claimed in any one of claims 1 to 4, wherein said method comprises, prior to the step of transmitting the new state data, a step of encrypting said new state data.

[Claim 6] The method as claimed in any of claims 1 to 5, wherein said method comprises a step of verifying the current state data, by checking compliance between the state data received from each of the at least two RFID tags, and a step of stopping the manufacturing operation in case of non-compliance.

[Claim 7] The method as claimed in any one of claims 1 to 6, wherein the new state data are stored in a centralized state-data storage device.

30 [Claim 8] The method as claimed in any of claims 1 to 7, wherein the new state data are stored in a blockchain.

[Claim 9] A system for sharing manufacturing data during a manufacturing of an end product to be manufactured during different manufacturing operations comprising assembly of various sub-products or realization of intangible operations, each sub-product or each intangible operation being associated with a respective RFID tag, each RFID tag comprising a RFID identifier identifying the sub-product or the intangible operation and comprising state data on a manufacturing state of the end product, said data-sharing system comprising:

- a local computer coupled to a local machine able to allow assembly of sub-products or realization of intangible operation for said each manufacturing operation, the local computer configured to read current state data from each of at least two RFID tags involved in the assembly of sub-products or in the realization of an intangible operation for said manufacturing operation, in order to verify whether the current state data are identical or compatible with one another, wherein the local machine is configured to read the at least two RFID tags, to extract data on the manufacturing state of the end product from the at least two RFID tags and to write new data on the manufacturing state of the end product to the at least two RFID tags;
- a generator of new state data from reorganization operations between the current state data, the generator configured to separate the new state data into two separated new state data and associating each separated new state data to a RFID identifier of the at least two RFID tags and to generate a final identifier Id_F associated to the end product;
- a transmitter (123) of each separated new state data to each of at least two RFID tags;
- a centralized storage device configured to store the separated new state data with the RFID identifier of the respective RFID tag and with an operation identifier corresponding to said manufacturing operation and to store the RFID identifiers of all RFID tags, the separated new state data of the last manufacturing operation, and the final identifier Id_F.

[Claim 10] The system as claimed in claim 9, wherein said system comprises a centralized state-data storage device for storing the new state data.

[Claim 11] The system as claimed in either one of claims 9 and 10, wherein said system comprises a blockchain for storing the new state data.

5 [Claim 12] A computer program product comprising program instructions that are exploitable by the system for sharing manufacturing data on a product as claimed in claims 9 to 11, which, when they are executed or interpreted by said system, trigger implementation of the method for sharing manufacturing data on a product as claimed in any one of claims 1 to 8.