

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 65051784PCT02	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/US2019/034798	International filing date (day/month/year) 31 May 2019 (31.05.2019)	Priority date (day/month/year) 31 May 2018 (31.05.2018)
International Patent Classification (IPC) or both national classification and IPC IPC: E03C 1/05; G06Q 10/06; G06Q 10/06 CPC: G06Q 10/06; E03C 1/05		
Applicant KIMBERLY-CLARK WORLDWIDE, INC.		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 7 sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:

a. ☒ (sent to the applicant and to the International Bureau) a total of 6 sheets, as follows:

☒ sheets of the description, claims and/or drawings which have been amended and/or sheets containing rectifications authorized by this Authority, unless those sheets were superseded or cancelled, and any accompanying letters (see Rules 46.5, 66.8, 70.16, 91.2, and Section 607 of the Administrative Instructions).

☐ sheets containing rectifications, where the decision was made by this Authority not to take them into account because they were not authorized by or notified to this Authority at the time when this Authority began to draw up this report, and any accompanying letters (Rules 66.4bis, 70.2(e), 70.16 and 91.2).

☐ superseded sheets and any accompanying letters, where this Authority either considers that the superseding sheets contain an amendment that goes beyond the disclosure in the international application as filed, or the superseding sheets were not accompanied by a letter indicating the basis for the amendments in the application as filed, as indicated in item 4 of Box No. I and the Supplemental Box (see Rule 70.16(b)).

b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____ containing a sequence listing, in the form of an Annex C/ST.25 text file, as indicated in the Supplemental Box Relating to Sequence Listing (see paragraph 3ter of Annex C of the Administrative Instructions).

4. This report contains indications relating to the following items:

☒ Box No. I Basis of the report

☐ Box No. II Priority

☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

☐ Box No. IV Lack of unity of invention

☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement

☐ Box No. VI Certain documents cited

☐ Box No. VII Certain defects in the international application

☐ Box No. VIII Certain observations on the international application

Date of submission of the demand 31 March 2020 (31.03.2020)	Date of completion of this report 04 May 2020 (04.05.2020)
Name and mailing address of the IPEA/US COMMISSIONER FOR PATENTS MAIL STOP PCT, ATTN: IPEA/US P.O. BOX 1450 ALEXANDRIA, VA 22313-1450, UNITED STATES OF AMERICA Facsimile No. (571)273-8300	Authorized officer TUAN N NGUYEN Telephone No. (571)272-4892

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Box No. I Basis of the report

1. With regard to the **language**, this report is based on:

- ☒ the international application in the language in which it was filed.
- ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of:
- ☐ international search (Rules 12.3(a) and 23.1(b))
- ☐ publication of the international application (Rule 12.4(a))
- ☐ international preliminary examination (Rules 55.2(a) and/or 55.3(a) and (b))

2. With regard to the **elements** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

- ☐ the international application as originally filed/furnished, or
- ☒ the description:
pages 1-16 as originally filed/furnished.
pages* _____ received by this Authority on _____
pages* _____ received by this Authority on _____
- ☒ the claims:
Nos. _____ as originally filed/furnished.
Nos.* _____ as amended (together with any statement) under Article 19
Nos.* 1-18 received by this Authority on 31 March 2020 (31.03.2020)
- ☒ the drawings:
pages 1/5-5/5 as originally filed/furnished.
pages* _____ received by this Authority on _____
pages* _____ received by this Authority on _____
- ☐ a sequence listing - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since either they are considered to go beyond the disclosure as filed, or they were not accompanied by a letter indicating the basis for the amendments in the application as filed, as indicated in the Supplemental Box (Rules 70.2(c) and (c-bis)):

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____

5. ☐ This report has been established:

- ☐ taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rules 66.1(d-bis) and 70.2(e)).
- ☐ without taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91(Rules 66.4bis and 70.2(e)).

6. With regard to top-up searches (Rules 66.1ter and 70.2(f)):

- ☐ A top-up search was carried out by this Authority on _____
- ☐ Additional relevant documents have been discovered during the top-up search.
- ☒ No top-up search was carried out by this Authority because it would serve no useful purpose.

7. ☐ Supplementary international search report(s) from Authority(ies) _____ has/ have been received and taken into account in establishing this report (Rule 45bis.8(b) and (c)).

* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	9, 16 AND 18	YES
	Claims	1-8, 10-15 AND 17	NO
Inventive step (IS)	Claims		YES
	Claims	1-18	NO
Industrial applicability (IA)	Claims	1-18	YES
	Claims		NO
2. Citations and explanations (Rule 70.7)			
----- EXPLANATION ----- D1 - CN 106193226 A (the original non-English language document was used for the purpose of establishing the written opinion) D2 - KR 10-2015-0127426 A (a machine translation was used for the purpose of establishing the written opinion) D3 - CN 105404194 A (the original non-English language document was used for the purpose of establishing the written opinion) D4 - CN 106184261 A (the original non-English language document was used for the purpose of establishing the written opinion) D1-D4 are directed at systems for maintenance of toilets. 1. Novelty Claims 1-8, 10-15 and 17 are not novel and therefore do not comply with PCT Article 33(2). Claims 9, 16 and 18 are novel and therefore comply with PCT Article 33(2). <u>Claims 1-8 and 10-15</u> Each of D1 and D2 discloses (using the wording of claim 1): A washroom management system (D1: Paragraphs [0005]-[0007]; D2: Page 6 second paragraph) comprising: a functional sensor configured to generate operability level data for a washroom component defining a status of the washroom component (D1: Paragraph [0014] - when the electricity is switched on, the system assesses water tank level, electricity, D2: Page 8 first paragraph - second sensor that detects water level in toilet); a controller configured to modify an operation of the washroom component, wherein the washroom component has a normal operation state, an issue resolution state and a disabled state with the normal operation state being normal function of the washroom component, the issue resolution state being for performing maintenance on the washroom component and the disabled state being for disabling the washroom component from functioning (D1: Paragraph [0014] - toilet is deemed to be in working condition, automated maintenance mode, or to require maintenance personnel; D2: Page 8 second and third paragraphs, page 10 first paragraph, page 13 last paragraph - page 14 first paragraph - blockage detected, manager informed of clog, control unit may change toilet to "blocking" mode to limit use of toilet when toilet is clogged); and a central management system configured to access the operability level data, communicate with the controller and evaluate the operability level data to determine an actionable event type for the washroom component, wherein the actionable event type comprises an automated resolution event and an assisted resolution event, (D1: Paragraph [0014] - automated maintenance mode triggered, but if problem cannot			

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	be solved, maintenance personnel will be contacted; D2: Page 10 first paragraph, page 14 third paragraph - manager can be informed of clog, water may be continuously supplied when toilet is clogged) and the central management system is further configured to: in response to determining the actionable event type is the automated resolution event, cause the controller to put the washroom component into the issue resolution state for a predetermined time period or sequence and then putting the washroom component to one of the normal operation state or disabled state based on evaluating the operability level data after the issue resolution state (D1: Paragraph [0016] - if toilet is clogged, flushing cycle started, if problem cannot be solved, maintenance personnel will be contacted; D2: Page 14 third paragraph - when toilet is clogged, water may be continuously supplied), and in response to determining the action event type is the assisted resolution event, cause the controller to leave the washroom component in the normal operation state or put the washroom component into the disabled state, based on operability level data, and causing a message to be sent to a washroom attendant to service the washroom component (D1: Paragraph [0016] - low deodorant level, maintenance personnel contacted; D2: Page 10 first paragraph - manager informed of clog). Therefore, claim 1 is not novel. Applicant's argument of the disabled state is noticed; however, such state is an alternative option. Each of D1 and D2 discloses (using the wording of claim 10): A method comprising: accessing operability data from a sensor specifying a status of a washroom component (D1: Paragraph [0014] - when the electricity is switched on, the system assesses water tank level, electricity, D2: Page 8 first paragraph - second sensor that detects water level in toilet), analyzing the operability data to determine an actionable event type for the washroom component, wherein the actionable event type comprises an automated resolution event and an assisted resolution event (D1: Paragraph [0014] - automated maintenance mode triggered, but if problem cannot be solved, maintenance personnel will be contacted; D2: Page 10 first paragraph, page 14 third paragraph - manager can be informed of clog, water may be continuously supplied when toilet is clogged), in response to determining the actionable event type is the automated resolution event, directing the washroom component to enter the issue resolution state and then directing the washroom component to enter one of the normal operation state or disabled state based on an evaluation of the operability level data after the issue resolution state (D1: Paragraph [0016] - if toilet is clogged, flushing cycle started, if problem cannot be solved, maintenance personnel will be contacted; D2: Page 14 third paragraph - when toilet is clogged, water may be continuously supplied), and in response to determining the action event type is the assisted resolution event, and directing the washroom component to enter the normal operation state or the disabled state, based on an evaluation of the operability level data (D1: Paragraph [0016] - low deodorant level, maintenance personnel contacted; D2: Page 10 first paragraph - manager informed of clog). Therefore, claim 10 is not novel. The additional features of claims 2-8 and 11-15 have also been disclosed in D1 and/or D2 as detailed below. Claim 11: in response to determining the action event type is the assisted resolution event comprises directing a message to be sent to a washroom attendant to service the washroom component (D1: Paragraph [0016] - low deodorant level, maintenance personnel contacted; D2: Page 10 first paragraph - manager informed of clog). Claims 2 and 12: the washroom component comprises one of a paper towel dispenser, a urinal, a toilet, bath tissue dispenser, a faucet, a soap dispenser, and a sanitizer dispenser (D1: Paragraphs [0014]-[0016]; D2: Page 8 first paragraph). Claims 3 and 13: the functional sensor comprises at least one of a consumable product level sensor, a water flow sensor, a flush valve sensor, and a motor current sensor (D1: Paragraphs [0014]-[0016]; D2: Page 8 first paragraph). Claims 4 and 14: from the automated resolution event and in response to putting the washroom component in the disabled state comprises causing a message to be sent to a washroom attendant to service the

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	washroom component (D1: Paragraphs [0014]-[0016]; D2: Page 10 first paragraph, page 13 last paragraph - page 14 first paragraph - manager informed of clog, control unit can change toilet to "blocking" mode to limit use of toilet when toilet is clogged). Claim 5: the assisted resolution event is refilling the washroom component with consumable product (D1: Paragraph [0016] - low deodorant level triggers maintenance, implicit that deodorant is being refilled). Claim 6: the issue resolution state comprises actuating the washroom component one or more times (D1: Paragraph [0016] - flushing cycle started; Page 14 third paragraph - when toilet is clogged, water may be continuously supplied). Claim 7: the washroom component comprises a toilet or urinal, the functional sensor comprises a flush valve sensor and a water flow sensor, and evaluating the operability data comprises determining, in response to a flush valve actuation from the flush valve sensor, a water flow reading from the water flow sensor and comparing the water flow reading to a predetermined water flow parameter (D1: Paragraph [0016]). Claim 8: the predetermined time period or sequence for the issue resolution state comprises causing the toilet or urinal to flush a specified number of times (D1: Paragraph [0016] - flushing cycle started). Claim 15: analyzing the operability data comprises determining the washroom component is jammed or partially clogged and determining the actionable event type is the automated resolution event type (D1: Paragraph [0016] - if toilet is clogged, flushing cycle started; D2: Page 14 third paragraph - when toilet is clogged, water may be continuously supplied). Therefore, claims 2-8 and 11-15 are not novel. <u>Claim 17</u> D1 discloses (using the wording of claim 17): A method comprising: accessing first operability data from a first sensor specifying consumable product use from a first washroom component and second operability data from a second sensor specifying an operational state of a second washroom component (D1: Paragraphs [0014]-[0016] - clogged toilet detected, other triggers include low water level in water tank, low deodorant level), analyzing the first and second operability data to determine an actionable event type for the washroom, wherein the actionable event type comprises an automated resolution event and an assisted resolution event and the analyzing comprises determining high consumable product use from the first washroom component and determining a low operational state for the second washroom component (D1: Paragraphs [0014]-[0016] - clogged toilet detected, other triggers include low water level in water tank, low deodorant level), in response to determining the actionable event type is the automated resolution event, directing a washroom component in the washroom to enter one of the normal operation state or disabled state based on an evaluation of the operability level data after the issue resolution state (D1: Paragraphs [0016], [0024] - if toilet is clogged, flushing cycle started, system attempts to self-repair, if problem cannot be solved, maintenance personnel will be contacted), and in response to determining the action event type is the assisted resolution event, and directing the washroom component to enter the normal operation state or the disabled state, based on an evaluation of the operability level data (D1: Paragraphs [0014]-[0016] - trigger for maintenance can be low level of deodorant, maintenance personnel required). Therefore, claim 17 is not novel. <u>Claims 9, 16 and 18</u> Claims 9, 16 and 18 are novel as none of the prior art documents fully discloses all the features of any of these claims in one single document. 2. Inventive step Claims 1-18 do not involve an inventive step and therefore do not comply with PCT Article 33(3).

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Claims 1-8, 10-15 and 17

Given the above novelty objection, claims 1-8, 10-15 and 17 do not involve an inventive step.

Notwithstanding the lack of novelty, claims 1 and 10 are also not inventive in view of D3.

D3 discloses (using the wording of claim 1):

A washroom management system (D3: Paragraphs [0004], [0040] - automated monitoring system) comprising:

a functional sensor configured to generate operability level data for a washroom component defining a status of the washroom component (D3: Paragraph [0011] - data collected from sensors), a controller configured to modify an operation of the washroom component, wherein the washroom component has a normal operation state, an issue resolution state and a disabled state with the normal operation state being normal function of the washroom component, the issue resolution state being for performing maintenance on the washroom component and the disabled state being for disabling the washroom component from functioning (D3: Paragraphs [0009], [0011], [0041], [0061] - when a fault is detected, the component would be put into protection state, when component is deemed to be not working, the smart controller stops the component from working) , and

a central management system configured to access the operability level data, communicate with the controller and evaluate the operability data to determine an actionable event type for the washroom component, wherein the actionable event type comprises an assisted resolution event, (D3: Paragraphs [0009], [0041], [0061] - when a fault is detected, the component would be put into protection state, a fault code would be sent to the server indicating need for maintenance or repair) and the central management system is further configured to in response to determining the action event type is the assisted resolution event, cause the controller to leave the washroom component in the normal operation state or put the washroom component into the disabled state, based on operability level data, and causing a message to be sent to a washroom attendant to service the washroom component (D3: Paragraphs [0009], [0041], [0061] - when a fault is detected, the component would be put into protection state, a fault code would be sent to the server indicating need for maintenance or repair).

The difference between claim 1 and D3 is the determination of automated resolution event, which is not disclosed in D3. However, toilet maintenance systems which can attempt to automatically repair issues are common in the art (see D1: Paragraphs [0014]-[0016]; D2: Page 14 third paragraph - when toilet is clogged, water may be continuously supplied; D4: Paragraphs [0005], [0010]-[0012] - the toilet goes into self-maintenance wherein the waste is processed according to type and the toilet is flushed continuously). Therefore, claim 1 is not inventive in view of D3 read alone.

Notwithstanding the lack of novelty, claim 10 is also not inventive in view of D3. Similar to claim 1, the difference between claim 10 and D3 is the determination of automated resolution event, which is not disclosed in D3. As discussed earlier, toilet maintenance systems which can attempt to automatically repair issues are common in the art (see discussion for claim 1 in view of D3). Therefore, claim 10 is not inventive in view of D3 read alone.

The additional features of claims 2,3,5 and 11-13 have also been disclosed in D3 as detailed below.

Claims 2 and 12: the washroom component comprises one of a paper towel dispenser, a urinal, a toilet, bath tissue dispenser, a faucet, a soap dispenser, and a sanitizer dispenser (D3: Paragraphs [0012], [0014], [0016]-[0020];).

Claims 3 and 13: the functional sensor comprises at least one of a consumable product level sensor, a water flow sensor, a flush valve sensor, and a motor current sensor (D3: Paragraphs [0012], [0014], [0016]-[0020]).

Claim 5: the assisted resolution event is refilling the washroom component with consumable product (D3: Paragraph [0046] - when liquid level in dispenser is lower than a threshold, server is prompted to send signal to maintenance department).

Claim 11: in response to determining the action event type is the assisted resolution event comprises directing a message to be sent to a washroom attendant to service the washroom component (D3: Paragraphs [0009], [0041], [0061] - when a fault is detected, the component would be put into protection state, a fault code would be sent to the server indicating need for maintenance or repair).

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	Therefore, notwithstanding the lack of novelty, claims 2,3,5 and 11-13 are not inventive in view of D3. Notwithstanding the lack of novelty, claims 4,6-8, 14 and 15 are also not inventive. Claims 4 and 14 are directed at sending a message to a washroom attendant after the automated resolution state. Claims 6-8 and 15 are directed at flushing the toilet multiple times as means of automated resolution. These are features that the skilled person would have been aware of (see D1: Paragraphs [0014]-[0016]; D2: Page 10 first paragraph, page 13 last paragraph - page 14 third paragraph - manager informed of clog, control unit can change toilet to "blocking" mode to limit use of toilet when toilet is clogged, water may be continuously supplied; D4: Paragraphs [0010]-[0012], [0016]-[0017] - when toilet is clogged, waste is processed according to type and the toilet is flushed continuously, self-maintenance can be carried repeatedly to clear the toilet. If clog cannot be cleared, system can send out a fault signal to prompt a maintenance personnel to carry out repair). Therefore, an inventive step cannot be acknowledged for claims 4, 6-8, 14 and 15 in view of D3 read alone. <u>Claims 9 and 16</u> Claim 9 is directed at the system of claim 7 further comprising the toilet not flushing when in the disabled state, which is an obvious implementation detail for the skilled person (see D3: Paragraph [0011] - data collected from sensors, when component is deemed to be not working, the smart controller stops the component from working). Therefore, claim 9 is not inventive in view of D1, D2 or D3 read separately. Claim 16 is further directed at the event being assisted resolution type when the toilet is fully clogged, which is an intuitive measure that the skilled person would clearly execute. Therefore, claim 16 is not inventive in view of D1, D2 or D3 read separately. <u>Claim 18</u> Claim 18 is further directed at the system of claim 17 further comprising the first washroom component being a bath tissue or paper towel dispenser and the second washroom component being a toilet or urinal, which are common washroom components. Therefore, an inventive step cannot be acknowledged for claim 18 in view of D1. 3. Industrial applicability Claims 1-18 are industrially applicable and therefore comply with PCT Article 33(4).

1. A washroom management system comprising:

a functional sensor configured to generate operability level data for a washroom component defining a status of the washroom component;

a controller configured to modify an operation of the washroom component, wherein the washroom component has a normal operation state, an issue resolution state and a disabled state with the normal operation state being normal function of the washroom component, the issue resolution state being for performing maintenance on the washroom component and the disabled state being for disabling the washroom component from functioning; and

a central management system configured to access the operability level data, communicate with the controller and evaluate the operability level data to determine an actionable event type for the washroom component, wherein the actionable event type comprises an automated resolution event and an assisted resolution event, and the central management system is further configured to:

in response to determining the actionable event type is the automated resolution event, cause the controller to put the washroom component into the issue resolution state for a predetermined time period or sequence and then putting the washroom component to one of the normal operation state or disabled state based on evaluating the operability level data after the issue resolution state; and

in response to determining the action event type is the assisted resolution event, cause the controller to leave the washroom component in the normal operation state or put the washroom component into the disabled state, based on operability level data, and causing a message to be sent to a washroom attendant to service the washroom component.

2. The system of claim 1, wherein the washroom component comprises one of a paper towel dispenser, a urinal, a toilet, bath tissue dispenser, a faucet, a soap dispenser, and a sanitizer dispenser.

3. The system of claim 2, wherein the functional sensor comprises at least one of a consumable product level sensor, a water flow sensor, a flush valve sensor, and a motor current sensor.

4. The system of claim 1, wherein from the automated resolution event and in response to putting the washroom component in the disabled state comprises causing a message to be sent to a washroom attendant to service the washroom component.

5. The system of claim 1, wherein the assisted resolution event is refilling the washroom component with consumable product.
6. The system of claim 1, wherein the issue resolution state comprises actuating the washroom component one or more times.
7. The system of claim 1, wherein the washroom component comprises a toilet or urinal, the functional sensor comprises a flush valve sensor and a water flow sensor, and evaluating the operability data comprises determining, in response to a flush valve actuation from the flush valve sensor, a water flow reading from the water flow sensor and comparing the water flow reading to a predetermined water flow parameter.
8. The system of claim 7, wherein the predetermined time period or sequence for the issue resolution state comprises causing the toilet or urinal to flush a specified number of times.
9. The system of claim 7, wherein the disabled state comprises causing the toilet or urinal to not flush.
10. A method comprising:
 - accessing operability data from a sensor specifying a status of a washroom component;
 - analyzing the operability data to determine an actionable event type for the washroom component, wherein the actionable event type comprises an automated resolution event and an assisted resolution event;
 - in response to determining the actionable event type is the automated resolution event, directing the washroom component to enter the issue resolution state and then directing the washroom component to enter one of the normal operation state or disabled state based on an evaluation of the operability level data after the issue resolution state; and
 - in response to determining the action event type is the assisted resolution event, and directing the washroom component to enter the normal operation state or the disabled state, based on an evaluation of the operability level data.

11. The method of claim 10, wherein in response to determining the action event type is the assisted resolution event comprises directing a message to be sent to a washroom attendant to service the washroom component.
12. The method of claim 10 wherein, the washroom component comprises one of a paper towel dispenser, a urinal, a toilet, bath tissue dispenser, and a faucet.
13. The method of claim 10, wherein the sensor comprises at least one of a consumable product level sensor, a water flow sensor, a flush valve sensor, and a motor current sensor.
14. The method of claim 10, wherein in the automated resolution event and in response to directing the washroom component to enter the disabled state comprises directing a message to be sent to a washroom attendant to service the washroom component.
15. The method of claim 10, wherein analyzing the operability data comprises determining the washroom component is jammed or partially clogged and determining the actionable event type is the automated resolution event type.
16. The method of claim 10, wherein analyzing the operability data comprises determining the washroom component is fully clogged and determining the actionable event type is the assisted resolution event type.
17. A method comprising:
 - accessing first operability data from a first sensor specifying consumable product use from a first washroom component and second operability data from a second sensor specifying an operational state of a second washroom component;
 - analyzing the first and second operability data to determine an actionable event type for the washroom, wherein the actionable event type comprises an automated resolution event and an assisted resolution event and the analyzing comprises determining high consumable product use from the first washroom component and determining a low operational state for the second washroom component;

in response to determining the actionable event type is the automated resolution event, directing a washroom component in the washroom to enter one of the normal operation state or disabled state based on an evaluation of the operability level data after the issue resolution state; and

in response to determining the action event type is the assisted resolution event, and directing the washroom component to enter the normal operation state or the disabled state, based on an evaluation of the operability level data.

18. The method of claim 17 wherein the first washroom component is a bath tissue or paper towel dispenser and the second washroom component is a toilet or urinal.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: KIMBERLY-CLARK WORLDWIDE, INC.
Int'l. Appln. No.: PCT/US2019/034798
Int'l. Filing Date: 31 May 2019
Title: WASHROOM MAINTENANCE AUTOMATION SYSTEM
Docket No.: 65051784PCT02
Date: March 31, 2020

RESPONSE TO WRITTEN OPINION AND AMENDMENT UNDER PCT ARTICLE 34

Mail Stop PCT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir/Madam:

In response to the International Search Report and Written Opinion prepared by the International Searching Authority dated September 2, 2019, Applicant respectfully requests that the following remarks be considered in the above-referenced application pursuant to PCT Article 34.

Claim Amendments:

Claim 1 has been amended to address the lack of clarity objection.

Statement:

Claim 1 recites that "in response to determining the actionable event type is the automated resolution event, cause the controller to put the washroom component into the issue resolution state for a predetermined time period or sequence and then putting the washroom component to one of the normal operation state or disabled state based on evaluating the operability level data after the issue resolution state."

The Written Opinion asserts that D1 shows this in Paragraph 16 because "if the toilet is clogged, the flushing cycle is started, if the problem cannot solved, maintenance personnel will be contacted; D2: Page 14 third paragraph – when toilet is clogged, water may be continuously supplied."

However, this portions of D1 and D2 are not the same as the recited portion of claim 1 require "put[ting] the washroom component into the issue resolution state for a predetermined time period or sequence," and then either (1) "putting the washroom component to one of the normal operation state or [2] disabled state" Regarding the disabled state the specification describes at paragraph 37 "For example, if a toilet 130

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is clogged and the issue can't be resolved through the automated resolution process, the system 102 may cause the controller 133 for the toilet 130 to disable the toilet 130, e.g., turn the water valve 132 to the toilet 130 off and, optionally, cause the controller 133 for the bath tissue dispenser 104 for that toilet 130 to also enter the disabled state to prevent a user from putting (additional) bath tissue paper 105 in the clogged toilet 130 and making the clog worse."

The relied upon portions of D1 note that if the problem can't be solved then "maintenance personal will be contacted," and "water may be continuously supplied." Neither of these portions of D1 or D2 describe the claimed disabled state of claim 1, which, for example, prevents the problem from worsening.

Claim 1 also recites "in response to determining the action event type is the assisted resolution event, cause the controller to leave the washroom component in the normal operation state or put the washroom component into the disabled state, based on operability level data, and causing a message to be sent to a washroom attendant to service the washroom component."

The Written Opinion asserts that D1 shows this in Paragraph 16 ("low deodorant level, maintenance personnel contacted") and D2 shows this on Page 10 first paragraph ("manager informed of clogged"). Once again, neither of these portions of D1 or D2 describe the claimed disabled state of claim 1, which, for example, prevents the problem from worsening

Conclusion:

Applicant respectfully submits that all of the claims of the present application satisfy the requirements of novelty, inventive step, and industrial applicability. In light of the foregoing, issuance of a favorable International Preliminary Report on Patentability is respectfully requested.

Respectfully submitted,

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