

*Copeland Comfort Control, LP, and
ecobee Technologies, ULC*

v.

Ollnova Technologies Ltd.

IPR2023-00626, U.S. Patent No. 7,746,887

Patent Owner's Demonstrative Exhibits

July 9, 2024

Ex. 2009

'887 Patent, Claim 1

- [1.pre] A wireless automation device, comprising:
- [1.a] a transceiver operable to wirelessly communicate packets of information over a wireless network;
 - [1.b] a sensor operable to generate a indicator for a sensed condition;
 - [1.c] a controller configured to poll the sensor at a polling interval to read the indicator during a current period of the polling interval and to selectively operate the transceiver to communicate information associated reading of the indicator; and
 - [1.d] a memory, the controller storing a reading of the indicator during the current period in the memory, where the memory stores at least one prior reading of the indicator, the prior reading of the indicator made during a prior period of the polling interval,
 - [1.e] wherein the transceiver is configured to transmit a most recent reading of the indicator stored in the memory during a period of **a transmission interval** in response to detecting a change in the sensed condition outside a predetermined range and **wherein transmission of the most recent reading of the indicator stored in the memory during the period of the transmission interval is suspended in response to detecting a change in the sensed condition within the predetermined range.**

Ex. 1001 ('887), Claim 1, 14:48-15:4.

Summary of Why The Petition Fails

- The prior art does not disclose, teach or suggest a “transmission interval.”
- Periodic monitoring (allegedly a polling interval) is not a transmission interval.
- The “report block” in Kates-711 and Kates-505 is not a transmission interval.
- The prior art does not disclose, teach or suggest suspension of transmission in response to detecting a change in the sensed condition withing the predetermined range.
- Neither *Kates-711*, *Kates-505*, nor *Mueller* disclose suspension of a transmission that would have otherwise occurred.

Paper 16, 13-19; Paper 19, 1-2, 13-19.

Grounds 1-12: No Transmission Intervals

Construction of Transmission Interval

- Claim element [1.e] recites “wherein the transceiver is configured to transmit a most recent reading of the indicator stored in the memory during a period of a transmission interval in response to detecting a change in the sensed condition outside a predetermined range and wherein transmission of the most recent reading of the indicator stored in the memory during the period of the transmission interval is suspended in response to detecting a change in the sensed condition within the predetermined range.

Paper 16, 8-9; Paper 19, iv; Ex. 1001 ('887), 14:63-15:5.

Construction of Transmission Interval

- An “interval” is “a space of time between events or states.”
- A “transmission interval” is the space of time between successive transmission periods.

The controller also controls the transceiver to selectively communicate information associated with the signal from the sensor. The information is transmitted during a variable periodic interval for transmitting the information.

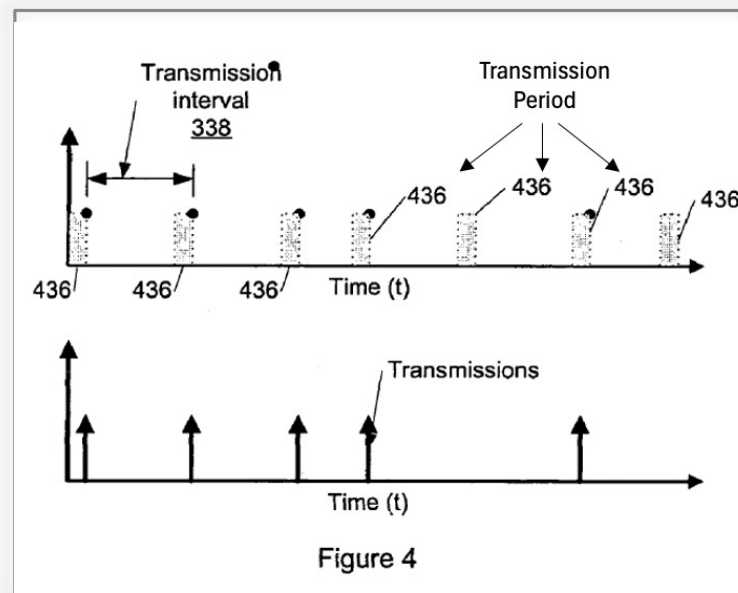
Ex. 1001 ('887), 2:16-20.

- A “transmission interval” is not a polling interval (the space of time between successive polling periods).

Paper 16, 8-9; Paper 19, 3-7; Ex. 2006, ¶¶ 46, 50.

Construction of Transmission Interval

- A “transmission interval” can include a transmission period during which transmission was suspended.



Ex. 1001 ('887), Fig. 4.

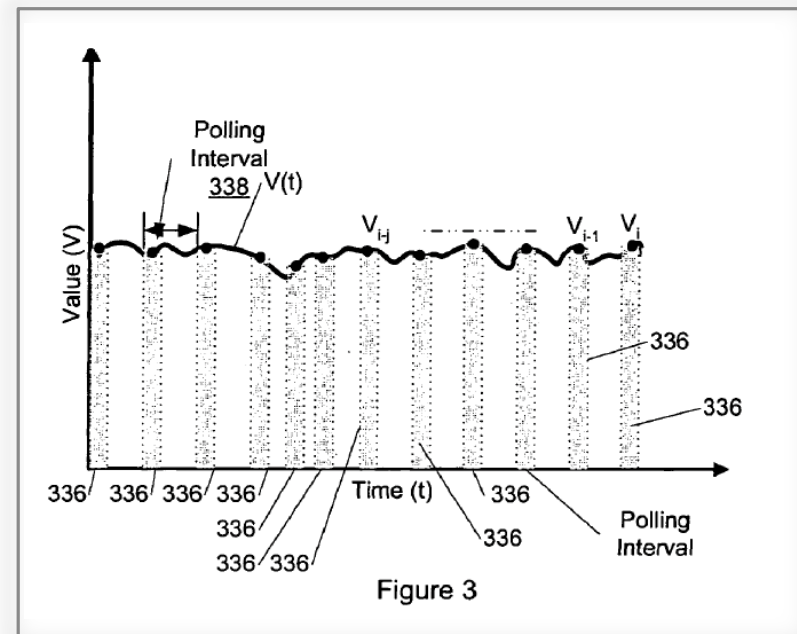
Paper 16, 4-6; Paper 19, 4-5; Ex. 2006, ¶¶ 46, 50.

Construction of Transmission Interval

- A “polling interval” is the space in time between successive polling periods.

In an embodiment, the processor 214 polls the sensor 209 during a recurring polling period 336. During a polling period 336, any one or each of the processor 214, the sensor 209 and/or the transceiver 216 may be operable. Each period 336 recurs at a variable frequency or interval 338. The interval 338 may be considered a time beginning at the start of a period 336 and ending at the start of the next consecutive interval 336. A polling period 336 may be a short amount of time relative to the interval 338 or frequency of occurrence of the polling period. For example, a period 336 may extend for several microseconds for an interval 338 of in the range of milliseconds or more, may occur for one or more milliseconds every second or more, a second for every 10 or more seconds or more, or even in the range of minutes every several minutes.

Ex. 1001 ('887), 9:23-37.



Ex. 1001 ('887), Fig. 3.

Paper 16, 3-5; Paper 19, 4-5; Ex. 2006, ¶¶ 46, 50.

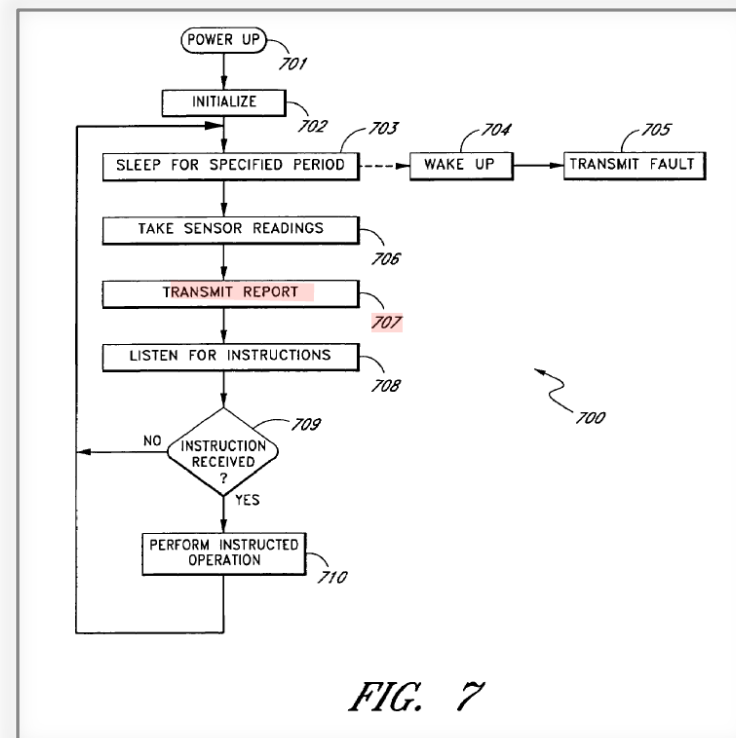
Construction of Transmission Interval

- A “period” does not have to be a “periodic interval,” but it is more than a simple single step in a flowchart.

If no fault occurs during the sleep period, then when the specified sleep period has expired, the process enters a block 706 where the sensor unit 102 takes a sensor reading from the sensor(s) 201. The sensor data is subsequently sent to the monitoring computer 113 in a report block 707.

Ex. 1004 (Kates-711), 15:57-62.

- A transmission interval is not the same thing as a polling interval.
- “[D]ifferent claim terms are presumed to have different meanings.”



Ex. 1004 (Kates-711), Fig. 7.

Paper 16, 6-9; Paper 19, 5-6.

Kates-711 and Kates-505 do not disclose, teach or suggest “transmission intervals”

- Kates’ disclosure of a polling interval (e.g., “periodic monitoring” or “sensing” periods) does not teach a space of time between successive transmission periods.
- A “Transmit Report” block is just an event in a loop with no reference to whether the block occurs during a period of a transmission interval.

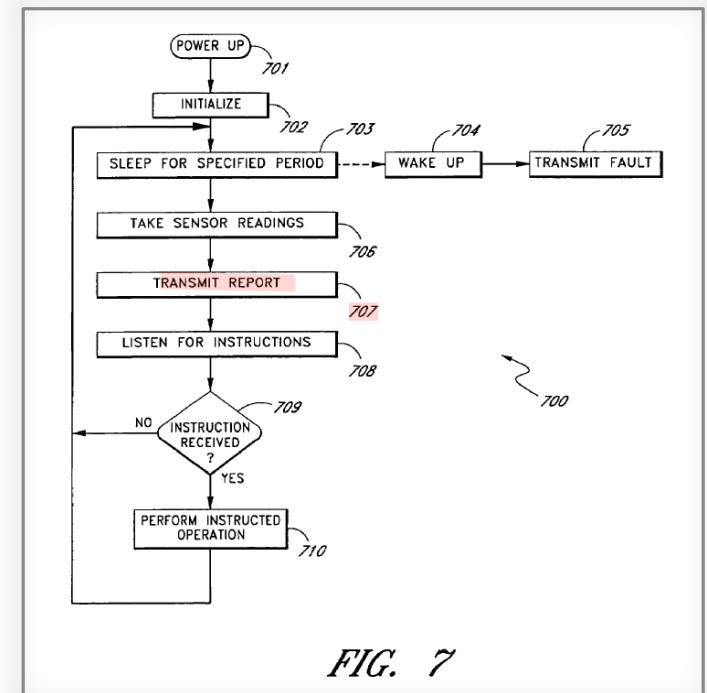


FIG. 7

Ex. 1004 (Kates-711), Fig. 7.

Paper 16, 10-12, 14-17; Paper 19, 11-16; Ex. 2006, ¶¶ 49-50.

Kates-711 and Kates-505 do not disclose, teach or suggest “transmission intervals”

- Kates’s disclosure of “Take Sensor Readings” block 706 and “Transmit Report” block 707 do not teach a polling interval or a transmission interval.
- Kates does not disclose a transmission interval in which the transmission is suspended.
- Kates does not disclose a transmission interval covering multiple polling intervals.

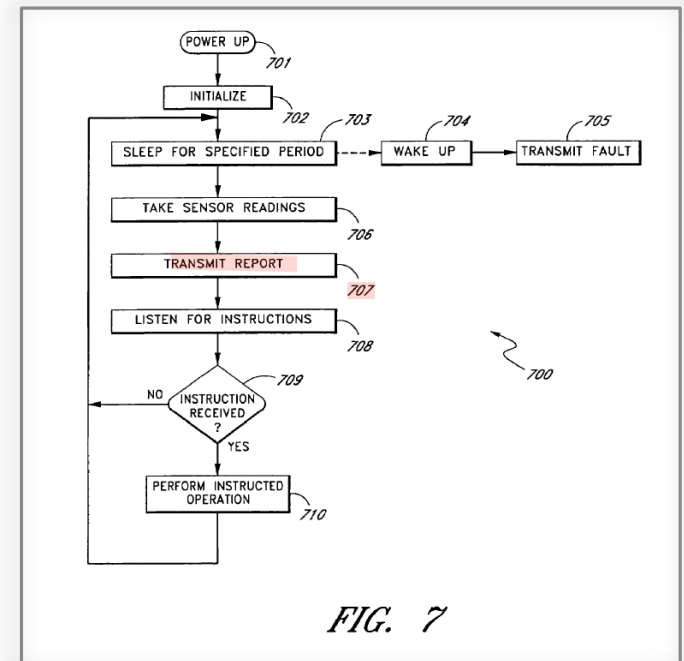


FIG. 7

Ex. 1004 (Kates-711), Fig. 7.

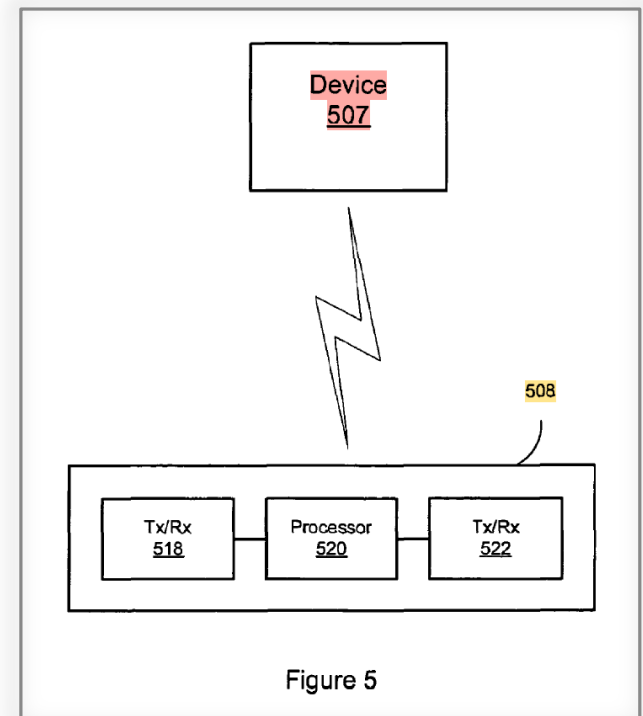
Paper 16, 10-12, 14-17; Paper 19, 11-16; Ex. 2006, ¶¶ 48-50.

Kates-711 and Kates-505 do not disclose, teach or suggest “transmission intervals.”

- The disclosure in the '887 Patent of a separate controller 508 in a building automation system communicating with a wireless automation device 507 is not analogous to Kates.
- The controller 508 is not a controller comprised in a wireless automation device.

FIG. 5 illustrates an exemplary controller 508 of a building automation system in communication with a device 507. The device 507 is configured for dynamic value reporting as described above with respect to FIGS. 1-4.

Ex. 1001 ('887), 13:36-39.



Ex. 1001 ('887), Fig. 5.

Paper 16, 10-12, 14-17; Paper 19, 14.

Grounds 1-12: No Suspension of Transmission

Construction of Transmission is ... Suspended

- “wherein transmission of the most recent reading of the indicator stored in memory during the period of the transmission interval is **suspended** in response to detecting a change in the sensed condition within the predetermined range” means “wherein transmission of the most recent reading of the indicator **that would otherwise occur is stopped** in response to detecting a change in the sensed condition within the predetermined range”

Specifically, the Court
construes this phrase as “wherein the transmission of the most recent reading of the indicator that
would otherwise occur is stopped for the remainder of the transmission interval in response to
detecting a change in the sensed condition within the predetermined range.”

Ex. 2002 (ecobee Claim Construction Order), at 8.

Paper 16, 6-9; Paper 19, 7-10; Ex. 2006, ¶¶ 46-47.

Construction of Transmission is ... Suspended

- The plain and ordinary meaning of “suspend” is “to cause to stop for a period; interrupt” or “to halt a process temporarily.”
- Consistent with the use of “suspend” in the '887 Patent specification.

Similarly, the processor 214 may control the transceiver 216 to suspend the transmission of information, notwithstanding a flag being set identifying a transmission may be pending.

Ex. 1001 ('887), 11:9-12.

When the count reaches a maximum or a limit. The transceiver may be controlled to suspend the transmission of information transmission period, until the counter reaches a send limit. For example, the send limit may be set at five.

Ex. 1001 ('887), 11:56-59.

Paper 16, 6-9; Paper 19, 7-8; Ex. 2006, ¶ 47.

Construction of Transmission is ... Suspended

Based on the ordinary meaning of the term and the intrinsic record, “suspended” is clearly something more than “not transmitted.” Accordingly, the Court adopts ecobee’s construction, but notes any stoppage is only for the remainder of the transmission interval. Specifically, the Court construes this phrase as “wherein the transmission of the most recent reading of the indicator that would otherwise occur is stopped for the remainder of the transmission interval in response to detecting a change in the sensed condition within the predetermined range.”

Ex. 2002 (ecobee Claim Construction Order), at 8.

Petitioner Agrees With Court's Construction

B. “wherein transmission ... is *suspended* in response to detecting a chan[g]e in the sensed condition within the predetermined range” ([1.e])

Because the prior art discloses the term regardless of whether PO’s proposed construction is adopted or the plain and ordinary meaning is applied, the Board need not address this construction. Neikirk, ¶¶90, 160; *see also* DI, 15. But to the extent that there is a dispute, the term should be given its plain meaning, which is consistent with the *ecobee* district court construction that PO purports to adopt here, and inconsistent with PO’s characterization of the same. Neikirk Reply, ¶14.

Paper 17 (Petitioner’s Reply), at 5.

Construction of Transmission is ... Suspended

- The term “suspend” is more than just “not transmitted.”

The transmission of information is suspended during a transmission period 436 until the counter is increment to the send limit (i.e., 5).

Ex. 1001 ('887), 11:62-64.

Transmission of information during an interval may be suspended in response to an externally received control signal.

Ex. 1001 ('887), 2:24-26.

Paper 16, 6-9; Paper 19, 10; Ex. 2006, ¶ 47.

Kates-711 and Kates-505 do not disclose, teach or suggest “wherein transmission ... is suspended.”

- Claim 1 recites “wherein **transmission** of the most recent reading of the indicator stored in the memory during the period of the transmission interval **is suspended** in response to detecting a change in the sensed condition within the predetermined range.”
- Kates-711 and Kates-505 teach not transmitting but do not teach **suspending** a transmission that would have otherwise occurred.
- Kates-711 and Kates-505 do not teach stopping a transmission that would have otherwise occurred.

The sensor unit 102 generally conserves power by not transmitting data that falls within a normal range.

Ex. 1004 (Kates-711), 13:14-16.

Paper 16, 10-12, 17-19; Paper 19, 14-15; Ex. 2006, ¶ 52.

Mueller does not disclose, teach or suggest “wherein transmission ... is suspended.”

- Claim 1 recites “wherein **transmission** of the most recent reading of the indicator stored in the memory during the period of the transmission interval **is suspended** in response to detecting a change in the sensed condition within the predetermined range.”
- Mueller teaches not transmitting but does not teach **suspending** a transmission.
- Mueller does not teach stopping a transmission that would have otherwise occurred.

Upon completion of the learn mode, the transmitter within the remote sensor 100 will begin normal operation of transmitting sensed temperature data to the host-controlling thermostat.

Ex. 1031 (Mueller), 8:63-66.

Additionally, as described herein, such transmission shall only occur if the new sensed temperature is different by pre-defined amount from a previous transmitted temperature (e.g., $\frac{1}{16}^{\circ}$ F.).

Ex. 1031 (Mueller), 9:3-6.

Paper 16, 12-13, 17-19; Paper 19, 15-16; Ex. 2006, ¶ 52.

Prior Art Does Not Disclose “Transmission Interval” or “Suspended” Transmission

- Claim element [1.e] recites “wherein the transceiver is configured to transmit a most recent reading of the indicator stored in the memory during a period of a **transmission interval** in response to detecting a change in the sensed condition outside a predetermined range and wherein transmission of the most recent reading of the indicator stored in the memory during the period of the **transmission interval** is **suspended** in response to detecting a change in the sensed condition within the predetermined range.

Paper 16, 14-19; Paper 19, 11-16; Ex. 2006, ¶¶ 48-52; Ex. 1001 ('887), 14:63-15:4.

Dependent claims 3-8, 14, 15 and 18.

- Because the prior art does not teach or disclose either the transmission interval limitation or the suspension limitation of independent claim 1, it does not render obvious dependent claims 3-8, 14-15, and 18.
- *Synqor, Inc. v. Artesyn Techs., Inc.*, 709 F.3d 1365, 1375 (Fed. Cir. 2013) (“Th[e] court need not consider Defendants’ arguments that certain dependent claim limitations would have been obvious where the base claim has not been proven invalid.”).
- *Callaway Golf Co. v. Acushnet Co.*, 576 F.3d 1331, 1344 (Fed. Cir. 2009) (a judgment is irreconcilably inconsistent where a dependent claim is found obvious and the independent claim from which it depends is nonobvious).

Paper 16, 3; Paper 19, 2.