



Petitioners' Demonstrative Slides

***Copeland Comfort Control LP and Ecobee Technologies ULC¹
v. Ollnova Technologies Ltd.
Inter Partes Review of
U.S. Patent No. 7,746,887
July 9, 2024***

**IPR2023-00626
Patent Trial and Appeal Board
United States Patent and Trademark Office**

July 9, 2024

ROPES & GRAY

Copeland v. Ollnova Ex. 1053

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¹ Ecobee Technologies ULC has been joined as a petitioner to this proceeding.

Abbreviation	Description
'887	Ex. 1001, U.S. Patent No. 7,746,887
Neikirk	Ex. 1002, Declaration of Dr. Neikirk
ecobee Litigation	Ollnova Technologies Ltd. v. ecobee, Inc., No. 2-22-cv-00072 (E.D. Tex., filed March 8, 2022)
Hitt	U.S. Patent Application Publication No. 2004/0100394
Kates-505	U.S. Patent No. 7,102,505
Kates-711	U.S. Patent No. 7,528,711
Littrell	U.S. Patent Application Publication No. 2005/0246593
Mueller	U.S. Patent No. 6,513,723
Petitioners	Copeland Comfort Control LP and Ecobee Technologies ULC
PO	Patent Owner (Ollnova Technologies Ltd.)
Pet.	Paper 2 (Petition)
POR	Paper 16 (Patent Owner's Response)
Reply	Paper 17 (Reply)
POSR	Paper 25 (Patent Owner's Sur-Reply)

All citations within quotations omitted herein, and emphasis and color annotations added unless otherwise indicated

[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 chance in the sensed condition within the predetermined range.

§103 Ground	Claim(s)	Prior Art
1	1, 3-8, 18	Kates-711
2	1, 3-8, 18	Kates-711 in view of Hitt
3	1, 3-8, 14-15, 18	Kates-711 in view of Littrell
4	1, 3-8, 14-15, 18	Kates-711 in view of Hitt and Littrell
5	1, 3-8, 18	Kates-505
6	1, 3-8, 18	Kates-505 in view of Hitt
7	1, 3-8, 14-15, 18	Kates-505 in view of Littrell
8	1, 3-8, 14-15, 18	Kates-505 in view of Hitt and Littrell
9	1, 3-8, 18	Kates-505 in view of Mueller
10	1, 3-8, 18	Kates-505 in view of Mueller and Hitt
11	1, 3-8, 14-15, 18	Kates-505 in view of Mueller and Littrell
12	1, 3-8, 14-15, 18	Kates-505 in view of Mueller, Hitt, and Littrell

Pet. 5-6.

Disputed Issue	Slides
Claim Construction	
“transmission interval” ([1.e])	9-10
“wherein transmission ... is suspended in response to detecting a chan[g]e in the sensed condition within the predetermined range” ([1.e])	11
Grounds	
Overview	13
Teachings of “transmission interval” ([1.e])	14-16
Teachings of “wherein transmission ... is suspended in response to detecting a chan[g]e in the sensed condition within the predetermined range” ([1.e])	17-18

Claim Construction

<u>Disputed Claim Term</u>	<u>Petitioners' Proposed Claim Construction</u>	<u>PO's Proposed Claim Construction</u>
"transmission interval"	Plain and ordinary meaning	"the space of time between successive transmission periods"
"wherein transmission... is suspended in response to detecting a chan[g]e in the sensed condition within the predetermined range"	Plain and ordinary meaning	"wherein the 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"

- The prior art discloses and renders obvious the Claims under either party's construction

Neikirk Reply, ¶¶ 9, 14.

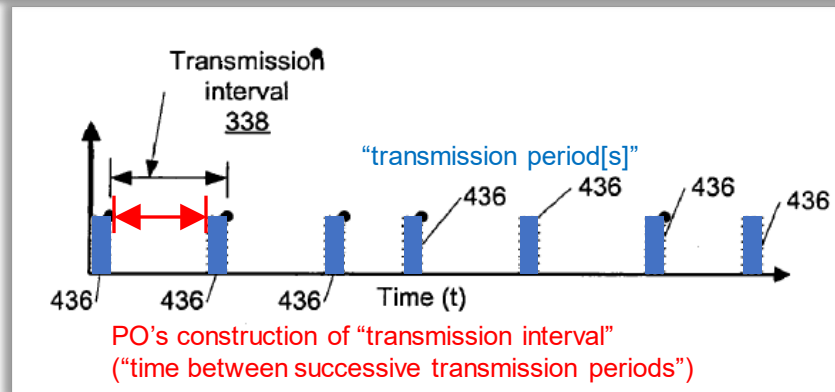
Federal Circuit: “[W]e need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy....’”

Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Matal, 868 F.3d 1013, 1017 (Fed. Cir. 2017).

<u>Disputed Claim Term</u>	<u>Petitioners' Proposed Claim Construction</u>	<u>PO's Proposed Claim Construction</u>
“transmission interval” ([1.e])	Plain and ordinary meaning	“the space of time between successive transmission periods”

- The specification states that “transmission interval” includes the period from the start of a transmission period and ending at the start of the next interval; PO’s construction excludes the duration of period 436 from the interval

'887, 9:27-30: “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 338.**”



'887 Fig. 4, 10:59-63; see also Reply, 2-3; Neikirk Reply, ¶ 10.

PO argues, in response to Petitioners' argument that the "transmission" and "polling" intervals can be synchronized, that "Petitioner's apparent construction conflating the claimed 'polling interval' and the claimed 'transmission interval' into a single interval would render the term 'transmission' meaningless or superfluous and is therefore improper."

- But, the '887 discloses coordinating transmission and polling intervals to occur at the same time

'887, 14:14-20: "The controller 508 may also synchronize the timing of the polling periods 336 and/or transmission periods 436. For example, the controller may communicate synchronization or timing information to the device 507. By communicating the synchronization or timing information, the device 507 and the controller will have synchronized intervals for report and receiving information."

- There is no express lexicography or disclaimer supporting a construction requiring that the "transmission" and "polling" intervals cannot be the same

Federal Circuit: "Beyond the words of the claim, neither the district court nor Raytek has identified any express disclaimer or independent lexicography in the written description that would justify adding that negative limitation."

Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1323 (Fed. Cir. 2003).
See also Reply, 4.

<u>Disputed Claim Term</u>	<u>Petitioners' Proposed Claim Construction</u>	<u>PO's Proposed Claim Construction</u>
“wherein transmission... is suspended in response to detecting a chan[g]e in the sensed condition within the predetermined range”	Plain and ordinary meaning	“wherein the 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”

- PO previously characterized this term to require that “forbear[ance] from transmission when the sensed data is not out of a pre-determined range” is not enough to meet this term

POR, 17.

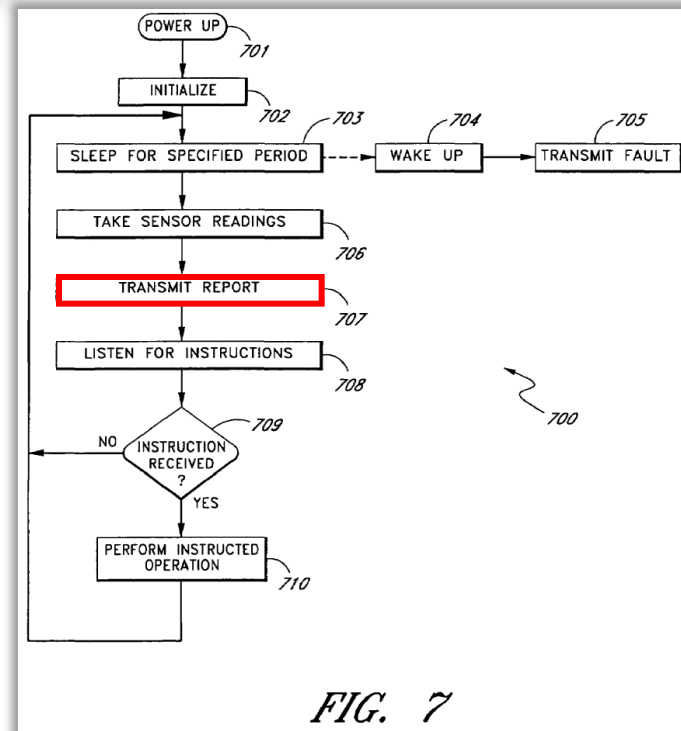
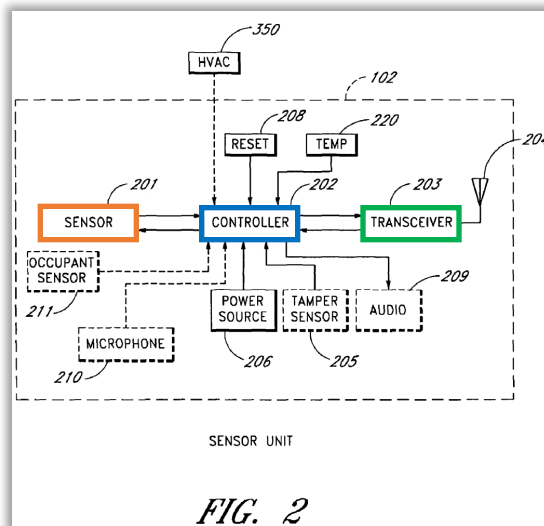
- Following the POSR, it is not clear that there is a substantive disagreement between the parties regarding the meaning of this term

POSR, 7.

- Petitioners agree that “suspend” requires that the “transmission of the most recent reading of the indicator that would otherwise occur is stopped,” but disagrees with PO’s position regarding forbearance

Grounds

Kates-711, 13:8-23: “The controller 202 receives sensor data from the sensor(s) 201.... [T]he controller evaluates the data received from the sensor(s) 201 and determines whether the data is to be transmitted to the base unit 112. **The sensor unit 102 generally conserves power by not transmitting data that falls within a normal range.**”



- Because PO did not dispute that Kates-711 is prior art, Petitioners' presentation does not focus on the Kates-505 grounds—but the same reasoning applies to Kates-505

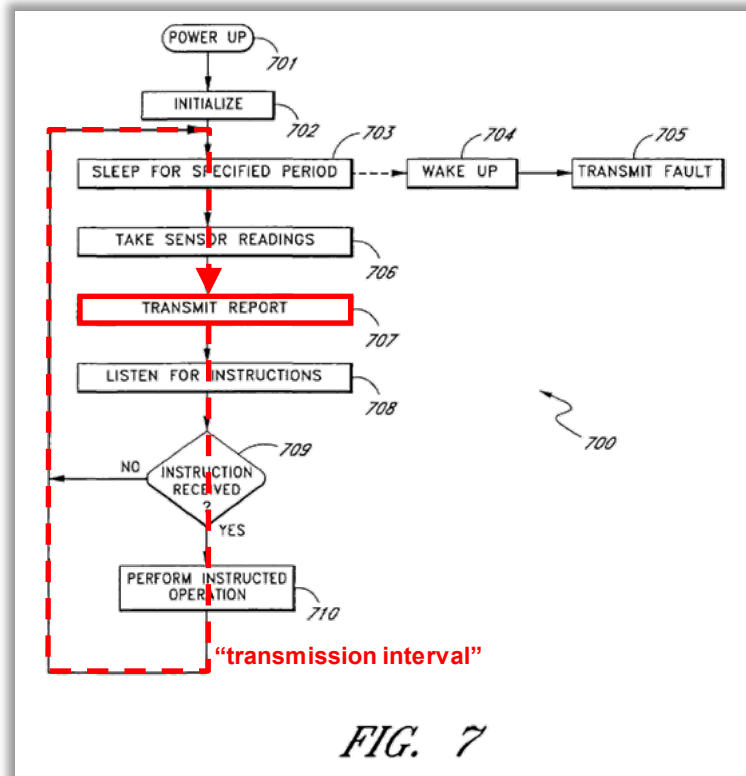
See Pet. 7 n.2 (“Kates-505 shares the same core critical disclosures with Kates-711.”) .

- Kates-711 discloses periodic “report” blocks that are transmission intervals

Kates-711:

15:50-16:7: “**FIG. 7 is a flowchart showing** one embodiment of operation of the sensor unit 102 wherein **periodic monitoring** is provided.... After initialization, the sensor unit 102 enters a low-power sleep mode.... 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.**”

18:56-57: “In one embodiment, the **sensor unit 102 reports humidity readings at regular intervals.**”



See also Pet, 22, 27, 31-35.

PO argues that Kates “only describe[s] ‘periodic monitoring’ or ‘sensing’ periods, i.e., ‘polling intervals,’ and thus do not disclose the claimed ‘transmission interval’ limitation. The Petitioner identifies block 706 in a flowchart showing operation of a sensor unit that provides periodic monitoring for the ‘polling interval’ and block 707 in the same flowchart for the ‘transmission interval.’” “However, as disclosed and claimed in the ’887 Patent, a single transmission interval may cover multiple polling intervals.”

POSR, 12, 14.

- But, the claims do not require different-length or unsynchronized “polling” and “transmission” intervals (see Slide 10)
- Kates-711 discloses synchronized transmission and polling intervals—consistent with an embodiment in the ’887 Patent

887 Patent:

’887, 14:14-20: “**The controller 508 may also synchronize the timing of the polling periods 336 and/or transmission periods 436.** For example, the controller may communicate synchronization or timing information to the device 507. By communicating the synchronization or timing information, the device 507 and the controller will have **synchronized intervals for report and receiving information.**”

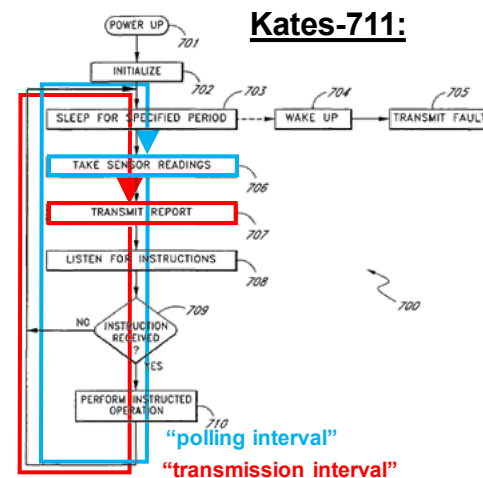


FIG. 7

See also Pet, 32-35; Reply, 11-12.

PO argues, in its surreply addressing the '887's disclosure of “synchronized intervals,” that: “The embodiment pointed to by Petitioner relates to interaction with a **controller 508** of a building automation system that **is** in communication with a wireless automation device 507 but is **not a controller processor of a wireless automation device as claimed.**”

POSR, 14 (quoting '887, 13:36-39).

- **But, Petitioners are not arguing that controller 508 is part of device 507**
- **PO agrees the controller 508 will “instruct the device” to vary polling and transmission intervals**

POR, 6: The “polling interval” and “transmission interval” may vary independently. See Ex. 1001, 14:5-9 (“[t]he **controller 508 may instruct the device ... to increase and/or decrease the polling interval 338 and/or the transmission interval 336.**”)

- **For example, controller 508 communicates timing information to synchronize the “transmission” and “polling” intervals used by the device**

'887, 14:14-20: “The controller 508 may also synchronize the timing of the polling periods 336 and/or transmission periods 436. For example, **the controller may communicate synchronization or timing information to the device 507.** By communicating the synchronization or timing information, **the device 507 and the controller will have synchronized intervals for report and receiving information.**”

Reply, 5, 12; see also 887, 13:36-39 (“device 507 is configured ... as described ... with respect to FIGS. 1-4”)

- Kates-711 discloses transmitting “anomalous” data, and suspending or not transmitting sensed data when the data to be transmitted is “normal” just like the '887 patent

Kates-711, 13:8-23: “The controller 202 receives sensor data from the sensor(s) 201.... [T]he controller evaluates the data received from the sensor(s) 201 and determines whether the data is to be transmitted to the base unit 112. **The sensor unit 102 generally conserves power by not transmitting data that falls within a normal range. ... If the data is outside the threshold** (e.g., above a high threshold, below a low threshold, outside an inner range threshold, or inside an outer range threshold), then **the data is deemed to be anomalous and is transmitted to the base unit 112.**”

'887, 3:32-37: “The **information may be communicated in response to a comparison that identifies** a change in the sensed condition, such as **a change outside a band limit, or a reading of the indicator beyond a limit.** Similarly, a **transmission of information may be suspended for periods of a transmission interval for which no change in the indicator has been identified.**”

PO argues: “Under a proper construction of the clause and based on the plain and ordinary meaning of ‘suspended,’ i.e., to ‘cause to stop for a period,’ ‘interrupt,’ or to ‘halt a process temporarily,’ Kates- 711 and Kates-505 do not disclose a ‘suspension’ of ‘transmission’ ‘during the period of the transmission interval’—i.e., stopping a transmission that would otherwise occur.”

POSR, 15.

- But Kates-711 discloses periodic transmissions (see Slide 14); suspension is temporary because transmissions may resume during the next period.

See Pet. 31-36; Neikirk, ¶¶85-87.

