第 17 回知的財産翻訳検定＜第 8 回英文和訳＞
1 級　電気・電子工学　標準回答

問１　次の英文クレームを日本語に訳しなさい。

1. A transmission controller for processing data items to be transmitted over a wireless link connecting a central terminal and a subscriber terminal of a wireless telecommunications system, a single frequency channel being employed for transmitting data items pertaining to a plurality of wireless links, the transmission controller comprising:

an orthogonal code generator for providing an orthogonal code from a set of 'm' orthogonal codes used to create 'm' orthogonal channels within the single frequency channel;

a first encoder for combining a data item to be transmitted on the single frequency channel with said orthogonal code from the orthogonal code generator, the orthogonal code determining the orthogonal channel over which the data item is transmitted, so that data items pertaining to different wireless links may be transmitted simultaneously within different orthogonal channels of said single frequency channel; and

a TDM encoder arranged to apply time division multiplexing techniques to the data item in order to insert the data item within a time slot of the orthogonal channel, so that a plurality of data items relating to different wireless links may be transmitted within the same orthogonal channel during a predetermined frame period.

問２　次の英文を日本語に訳しなさい。

Energy or power may be transferred wirelessly using a variety of known radiative, or far-field, and non-radiative, or near-field, techniques. For example, radiative wireless information transfer using low-directionality antennas, such as those used in radio and cellular communications systems and home computer networks, may be considered wireless energy transfer. However, this type of radiative transfer is very

inefficient because only a tiny portion of the supplied or radiated power is picked up. The vast majority of the power is radiated away in all the other directions and is lost in free space. Such inefficient power transfer may be acceptable for data transmission but is not practical for transferring useful amounts of electrical energy for the purpose of doing work, such as for powering or charging electrical devices.

One way to improve the transfer efficiency of some radiative energy transfer schemes is to use directional antennas to confine and preferentially direct the radiated energy towards a receiver. However, these directed radiation schemes may require potentially complicated tracking and steering mechanisms in the case of mobile transmitters and/or receivers. In addition, such schemes may pose hazards to objects or people that cross or intersect the beam when modest to high amounts of power are being transmitted.

A need exists for a wireless power transfer scheme that is capable of transferring useful amounts of electrical power over mid-range distances or alignment offsets. Such a wireless power transfer scheme should enable useful energy transfer over greater distances and alignment offsets than those realized with traditional induction schemes, but without the limitations and risks inherent in radiative transmission schemes.

問３　次の実施例の＊＊から＃＃までの部分を、図面を参照しつつ日本語に訳しなさい。

As shown in FIG. 1, a dispenser includes an outlet housing 110, an outlet 120, and a support 130. The outlet housing 110 provides a supporting structure for the outlet 120 and secures the outlet 120 at a position that enables a user to conveniently place a container proximate to (e.g., under) the outlet 120 for dispensing the contents through the outlet 120 and into the container. The outlet housing 110 also may secure a chute or tube that delivers the contents from a content source to the outlet 120 and further may define an upper portion of a

dispensing space or cavity that is configured to receive or accommodate a container to be filled by the dispenser. The dispensing space or cavity may be defined in a wall or door of an appliance or may be defined as a space exterior to a wall or door of an appliance. The outlet housing 110 may be fixed at a wall or door of an appliance such that the outlet housing 110 defines at least a portion of a space within the wall or door of the appliance, the outlet housing 110 may be movable from the interior of a wall or door of an appliance to the exterior of the wall or door of the appliance, or the outlet housing 110 may be positioned and attached to an appliance to remain at the exterior of a wall or door of the appliance.

The outlet 120 defines an output flow path of the contents being dispensed from the dispenser. For instance, the dispenser includes a tube or chute that guides the contents to the outlet 120, and the outlet 120 guides the contents to the exterior of the dispenser to be received by a container.

The support 130 is a tray or container support that supports a container to be filled with the contents using the dispenser. The support 130 may be positioned under the outlet 120 and may support a container to be filled with the contents dispensed through the outlet 120.

A container 140 may be any type of receptacle (e.g., a cup, a glass, etc.) that is able to receive the contents dispensed from the dispenser.

The dispenser directs a beam of light 210 along an output flow path of the outlet 120 in response to the container 140 being moved to a position that is closer to the outlet 120. For example, the dispenser may direct the beam of light 210 along the output flow path of the outlet 120 in response to sensor data that detects objects (e.g., containers) entering an area proximate to the outlet 120. In this example, the dispenser may direct the beam of light 210 in response to a sensor detecting the container 140 entering a dispensing area or cavity defined by the outlet housing 110 and the support 130. The beam of light 210 may be directed along the output flow path of the outlet

120 to assist a user in moving the container 140 to a position at which the contents dispensed through the outlet 120 are received within the container 140.

FIG. 2 illustrates an example of a process 1500 for directing a beam of light along at least a portion of an output flow path of a dispenser in response to a user input command related to dispensing. The operations of the process 1500 are described generally as being performed by a system 500, which is not shown in FIGs. 1 and 2. The operations of the process 1500 may be performed by any combination of the components of the system 500. In some implementations, the operations of the process 1500 may be performed by one or more processors included in one or more electronic devices.

The system 500 receives a first user input command to set a particular quantity of contents to dispense from a dispenser (1510). For instance, the system 500 may receive a signal from an input button pressed by a user. The input button may be a measured fill input button that controls the system 500 to set a particular quantity of contents to dispense. The system 500 also may receive one or more user input actions to set or adjust the particular quantity of contents to dispense. The system 500 may receive the first user input command using the input unit 530.

In response to the first user input command, the system 500 directs a beam of light along at least a portion of an output flow path of the dispenser (1520).

The system 500 monitors for a second user input command to cause the dispenser to dispense the particular quantity of the contents (1530). For instance, the system 500 may wait for the second user input command and may track user input commands provided by a user subsequent to a first user input command. The system 500 also may track a time from when the first user input command was received while monitoring for a second user input command.

The system 500 determines whether a second user input command for causing the dispenser to dispense the particular

quantity of the contents is received based on the monitoring (1540). For example, the system 500 determines whether a signal from an input button pressed by a user has been received. The input button may be a dispense or fill input button that controls the system 500 to dispense the contents.
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In response to a determination that the second user input command to cause the dispenser to dispense the particular quantity of the contents has been received, the system 500 dispenses the particular quantity of the contents (1550) and turns off the beam of light (1560). For example, the controller 560 may control the dispenser 550 to dispense the contents (e.g., water) and may control the optical system 520 to turn off the beam of light. The system 500 may turn off the beam of light while dispensing the contents or may wait until all of the particular quantity of the contents has been dispensed prior to turning off the beam of light.

In response to a determination that the second user input command to cause the dispenser to dispense the particular quantity of the contents has not been received, the system 500 determines whether a threshold period of time has passed since receipt of the first user input command (1570). The system 500 may compare a time from when the first user input command was received to a threshold amount of time and make the determination based on the comparison. The threshold amount of time may be set to a time by which a user typically would have caused the dispenser to dispense the particular quantity of the contents after providing the user input command to set the particular quantity of the contents. For instance, the threshold amount of time may be set to thirty seconds or one minute.
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In response to a determination that the threshold period of time has passed since receipt of the first user input command, the system 500 turns off the beam of light (1580). For example, the controller 560 may control the optical system 520 to turn off the beam of light. The system 500 may turn off the beam of light after a threshold period of time has passed to conserve power when it is unlikely the user is using the beam of light to position a container.

In response to a determination that the threshold period

of time has not passed since receipt of the first user input command, the system 500 continues to monitor for a second user input command to cause the dispenser to dispense the particular quantity of the contents.

FIG. 1

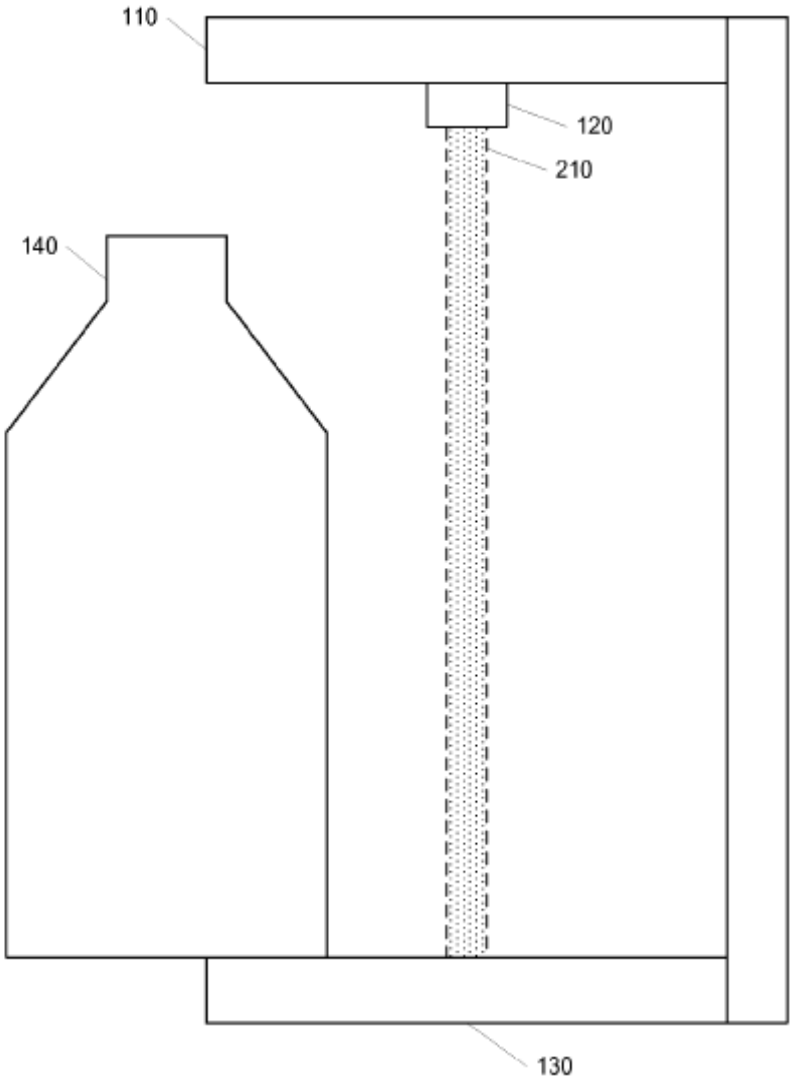
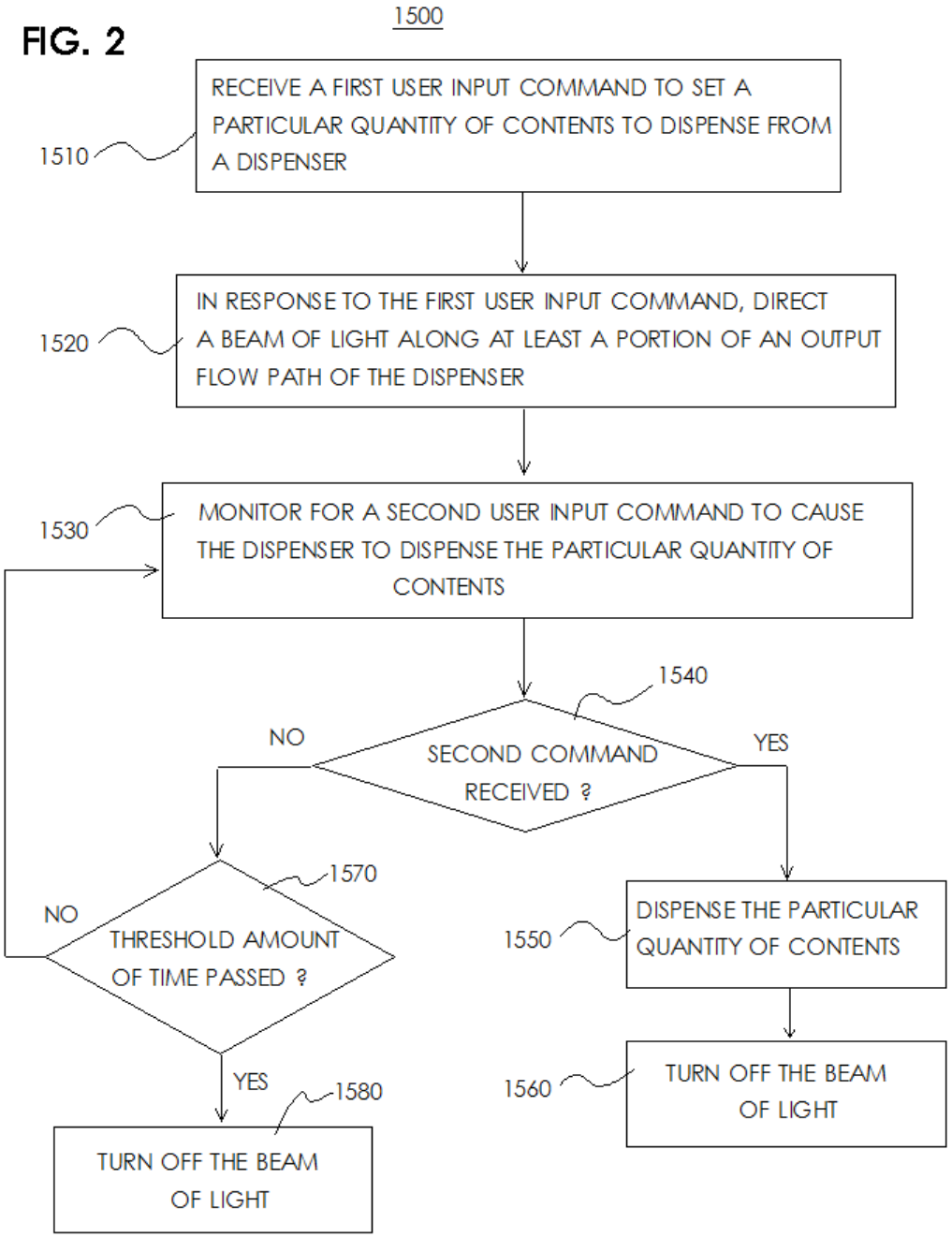


FIG. 2


1500
RECEIVE A FIRST USER INPUT COMMAND TO SET A PARTICULAR QUANTITY OF CONTENTS TO DISPENSE FROM A DISPENSER
1510
IN RESPONSE TO THE FIRST USER INPUT COMMAND, DIRECT A BEAM OF LIGHT ALONG AT LEAST A PORTION OF AN OUTPUT FLOW PATH OF THE DISPENSER
1520
MONITOR FOR A SECOND USER INPUT COMMAND TO CAUSE THE DISPENSER TO DISPENSE THE PARTICULAR QUANTITY OF CONTENTS
1530
1540
SECOND COMMAND RECEIVED ?
NO
YES
1570
THRESHOLD AMOUNT OF TIME PASSED ?
NO
YES
1580
TURN OFF THE BEAM OF LIGHT
1550
DISPENSE THE PARTICULAR QUANTITY OF CONTENTS
1560
TURN OFF THE BEAM OF LIGHT

模範解答（案）

１問目

無線通信システムの中央端末と加入者端末とを接続する無線リンク上で送信されるデータアイテムを処理するための送信制御装置であって、複数の無線リンクに関連するデータアイテムを送信するために単一の周波数チャネルが採用される送信制御装置において、

前記送信制御装置は、

ｍ個の直交チャネルを前記単一の周波数チャネルの中に生成するために使用されるｍ個の直交符号の組から直交符号を供給するための直交符号生成部と、

前記単一の周波数チャネル上で伝送されるデータアイテムを、前記データアイテムが送信される前記直交チャネルを決定する前記直交符号生成部からの前記直交符号と結合させ、これにより異なる無線リンクに関連するデータアイテムが前記単一の周波数チャネルの異なる直交チャネル内で同時に送信され得る第１エンコーダと、

前記直交チャネルのタイムスロットの中に前記データアイテムを挿入するために、時間分割多重技術を前記データアイテムに適用するように配置され、これにより異なる無線リンクに関連する複数のデータアイテムが、所定のフレーム期間の間に同一の直交チャネルの中で伝送され得るＴＤＭエンコーダと

を備えた送信制御装置。

２問目

エネルギー又は電力は、様々な公知の放射技術即ち遠距離場技術、非放射技術即ち近距離場技術を用いて無線で伝送され得る。例えば、無線セルラー通信システムや家庭用コンピュータネットワークに使用される、低指向性アンテナを用いた放射型の無線情報伝送は、無線のエネルギー伝送と考えられている。しかし、この種の放射型の伝送は、供給され又は放射された電力の僅かな部分だけだけが拾われるため、とても効率が悪い。電力のうちの大部分は、他の全ての方向に放散され、自由空間において失われてしまう。このような非効率な電力伝送はデータ伝送においては受け入れられ得るが、例えば電気機器に給電したり充電させたりするなどの仕事をさせる目的のための電気エネルギーの有益な量を伝送するのには実用的ではない。

放射型のエネルギー伝送方式の伝送効率を向上させるための１つの方法は、指向性アンテナを用い、放射エネルギーを受信機の向きに制限し優先的に受信機の方向に向かわせることである。しかし、これらの指向性放射方式は、携帯送信機及び／又は受信機の場合に潜在的に複雑な追跡／操縦機構が必要となり

得る。加えて、このような方式は、少量の電力～大量の電力が伝送されているときに、ビームと交差したり横切ったりする物や人に危害を与え得る。

有効な量の電力を中距離に亘って伝送することができ、また位置合わせの補正を行うことができる無線電力伝送方式が要望されている。そのような無線電力伝送方式は、伝統的な誘導方式により実現されているものよりもより長い距離の有効なエネルギー伝送を可能とし、また位置合わせの補正を可能としたものであり、しかし放射型伝送方式に固有の制限やリスクがないものであるべきである。

問３

ディスペンサに特定量の対象物を提供させるための第２ユーザ入力コマンドが受信されたことの判断に応答して、システム５００は、特定量の対象物を提供し（１５５０）、そして光ビームをオフにする（１５６０）。例えば、コントローラ５６０は、ディスペンサ５５０を制御して対象物（例えば、水）を提供し、そして光学システム５２０を制御して、光ビームをオフにしてもよい。システム５００は、対象物を提供している間に、光ビームをオフにしてもよく、あるいは光ビームをオフにする前に、特定量の対象物の全てが提供されるまで待機してもよい。

ディスペンサに特定量の対象物を提供させるための第２ユーザ入力コマンドが受信されていないとの判断に応答して、システム５００は、第１ユーザ入力コマンドの受信から閾値時間が経過したかどうかを判断する（１５７０）。システム５００は、第１ユーザ入力コマンドを受信したときからの時間を閾値時間と比較し、その比較に基づいて判断してもよい。閾値時間は、一般的にユーザがユーザ入力コマンドを供給して対象物の特定量を設定した後、ディスペンサに特定量の対象物を提供させるであろう時間に設定してもよい。例えば、閾値時間は３０秒または１分に設定してもよい。