Application Story

Yuanlin Christian Hospital - A Benchmark for Intelligent Hospitals

Yuanlin Christian Hospital (YCH) is a new medical institution affiliated with the Changhua Christian Hospital that holds a significant place in the history of medicine in Taiwan. Specifically, YCH was the first ever intelligent hospital in Asia to integrate intelligent systems with patient services, medical procedures, and energy management. The hospital not only provides all the convenience and functionality of a modern healthcare facility, but also makes Taiwan’s transition into an era of fully intelligent medicine.

Intelligent Wards Bring Patients and Nurses Closer Together

Traditional wards typically feature nurse call buttons or phones for patients to communicate with nurses. However, these buttons/phones do not offer instant notifications, which can lead to long wait times and patient mistrust of nursing staff. By contrast, YCH wards have been fitted with bedside information terminals that feature touch-controlled nurse call buttons for contacting nurses with a single touch. The electronic messaging system then notifies all on-call nurses, regardless of their location, of the request for assistance via an instant message sent to their hand-held device (mobile phone or tablet PC). Patients wishing to order a meal or adjust their medication no longer have to make in-person requests at the nurses station. With a simple touch of their nurse call button, they can send a message to the nurses’ station. The electronic messaging system also reduces the risk of errors or forgotten requests.

Blueprint of Intelligent Hospital

Ordering Information

<table>
<thead>
<tr>
<th>Solution Type</th>
<th>Edge Computing</th>
<th>LAPP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursing Dashboard</td>
<td>HIT-W183</td>
<td>AIM-S5</td>
</tr>
<tr>
<td>Control Center</td>
<td>HIT-W183AP-AMW1E</td>
<td>AIM-55</td>
</tr>
<tr>
<td>Patient Information Terminal</td>
<td>HIT-W183</td>
<td>USM-50E</td>
</tr>
<tr>
<td>Bedhead Information Terminal</td>
<td>HIT-W101</td>
<td>USM-500-W7853M</td>
</tr>
<tr>
<td>Vital Sign Measurement Automation</td>
<td>AMIS-50E</td>
<td>HIT-W101HWIB-B1E-C</td>
</tr>
<tr>
<td>Medication Management</td>
<td>AMIS-50M</td>
<td>HIT-W101HWIB-B1E-C</td>
</tr>
<tr>
<td>Mobile App</td>
<td>USM-110W</td>
<td>LEO-910</td>
</tr>
<tr>
<td>Real-Time Location System</td>
<td>LEO-T21</td>
<td>LEO-710, LEO-708</td>
</tr>
</tbody>
</table>
Advantech’s iWard solution is innovative and groundbreaking. The solution offers cloud solutions, microservices, statistical expansion, and AI applications, and has been implemented for multiple applications. Currently, Advantech is further productizing and standardizing the software and hardware integration to enable rapid deployment and management in diverse locations while also increasing the value and efficiency of the healthcare experience.

### iWard Architecture

**Advantages**
- **Distributed architecture reduces risk**
- **Excellent scalability and extensibility**
- **Lightweight edge ensures efficiency**
- **Enables real-time bed occupancy management**
- **Provides an overview of patient medical records and status**
- **Notifies staff of patient requests and device abnormalities**
- **Enables direct requests for nursing assistance**
- **Features staff sign-in verification mechanisms**
- **Displays real-time patient data**
- **Enables real-time communication with patients/wards**
- **Integrates vital sign measurements and notifications of detected abnormalities**
- **Provides an overview of all nursing station dashboards**
- **Enables real-time bed occupancy and patient management**
- **Displays statistical reports, historical records, and ward performance audit results**

**iWard Division Architecture**

- **General Hospital**
  - Provides a complete nurses’ station overview
  - Collates information of all patients/beds across nurses’ stations
  - Ensures access to system management rights

- **CMS Branch**
  - Notifies staff of patient needs immediately
  - Enables real-time communication with patients/nurses’ station

- **Integrated iWard Solutions**
  - Increases safety with facial recognition capabilities
  - Automatically sends patient requests and patient alerts
  - Enables real-time monitoring of intervention adherence
  - Provides real-time patient tracking
  - Regional alarm detection
  - Voice recognition for nurse report requests and send alert notifications
  -Instantaneous notifications of detected abnormalities
Advantech’s iWard solution is innovative and groundbreaking. The solution offers cloud solutions, microservices, statistical expansion, and AI applications, and has been implemented for multiple applications. Currently, Advantech is further productizing and standardizing the software and hardware integration to enable rapid deployment and management in diverse facilities while increasing the value and efficiency of the healthcare experience.

### iWard Architecture

- **Industrial App**
  - Distributed architecture reduces risk
  - Excellent scalability and extensibility
  - Lightweight edge ensures efficiency

- **PaaS (Microservice)**
  - Provides a complete nurses station overview
  - Collates information of all patients/beds across nurses’ stations
  - Enables access to system management rights

- **Nursing Station Dashboard**
  - Enables real-time bed occupancy management
  - Provides an overview of patient medical records and status
  - Allows staff to enter patient requests and device abnormalities
  - Utilizes ehr to staff shift schedules
  - Can serve as a bulletin board to provide contact information

- **Bedside Information Terminal**
  - Displays real-time patient data
  - Enables direct requests for nursing assistance
  - Sends requests to department healthcare staff
  - Features staff sign-in verification mechanisms

### Integrated iWard Solutions

- **General Hospital**
  - Increases safety with facial recognition capabilities
  - Automatically records any change in conditions
  - Monitors monitoring of intensive care unit
  - Real-time patient tracking
  - Real-time patient monitoring
  - Voice recognition
  - Voice recognition to control and send alarm notifications
  - Instantly reports notifications of detected abnormalities

- **CMS Branch Hospital 1**
- **CMS Branch Hospital 2**
- **CMS Branch Hospital 3**
- **CMS Branch Hospital 4**
Advantech’s iWard solution is innovative and groundbreaking. The solution offers cloud solutions, microservices, statistical expansion, and AI applications, and has been implemented for multiple applications. Currently, Advantech is further productizing and standardizing the software and hardware integration to enable rapid deployment and management in diverse locations while also increasing the value and efficiency of the healthcare experience.

**iWard Architecture**

- Provides an overview of all nursing station dashboards
- Enables real-time bed occupancy management
- Displays real-time patient data
- Enables direct requests for nursing assistance
- Sends requests to triage healthcare staff
- Features staff sign-in verification mechanisms
- Provides an overview of all patient medical records
- Notifies staff of patient needs immediately
- Enables real-time communication with patients/nurses’ station
- Integrates vital sign measurements and notification of patient needs
- Sends requests to bed management
- Provides real-time apparatus tracking
- Generates statistical reports, historical records, and ward performance audit results
- Sends requests to alarm detection
- Sends real-time apparatus tracking
- Sends real-time equipment tracking
- Sends real-time vital sign tracking
- Sends real-time patient status tracking
- Provides a complete nurses’ station overview
- Collates information of all patients/beds across nurses’ stations
- Enables access to system management rights

**iWard Division Architecture**

- Provides a complete nurses’ station overview
- Collates information of all patients/beds across nurses’ stations
- Enables access to system management rights
- Notifies staff of patient needs immediately
- Enables real-time communication with patients/nurses’ station
- Integrates vital sign measurements and notification of patient needs

**Integrated iWard Solutions**

- Distributed architecture reduces risk
- Excellent scalability and extendibility
- Lightweight edge ensures efficiency
- Provides a complete nurses’ station overview
- Collates information of all patients/beds across nurses’ stations
- Enables access to system management rights
- Notifies staff of patient needs immediately
- Enables real-time communication with patients/nurses’ station
- Integrates vital sign measurements and notification of patient needs

**iWard Management**

**iWard Data Services**
Application Story
Yuanlin Christian Hospital - A Benchmark for Intelligent Hospitals

Yuanlin Christian Hospital (YCH) is a new medical institution affiliated with the Changhua Christian Hospital that holds a significant place in the history of medicine in Taiwan. Specifically, YCH was the first ever intelligent hospital in Asia to integrate intelligent systems with patient services, medical procedures, and energy management. The hospital not only provides all the convenience and functionality of a modern healthcare facility but also marks Taiwan’s transition into an era of fully intelligent medicine.

Intelligent Wards Bring Patients and Nurses Closer Together
Traditional wards typically feature nurse call buttons or phones for patients to communicate with nurses. However, these buttons/phones do not offer instant notifications, which can lead to long wait times and patient mistrust of nursing staff. By contrast, YCH wards have been fitted with bedside information terminals that feature touch-controlled nurse call buttons for contacting nurses with a single touch. The electronic messaging system then notifies all on-call nurses, regardless of their location, of the request for assistance via an instant message sent to their hand-held device (mobile phone or tablet PC).

Patients wishing to order a meal or adjust their medication no longer have to make in-person requests at the nurses station. With a simple touch of their nurse call button, they can send a message to the nurses’ station. The electronic messaging system also reduces the risk of errors or forgotten requests.

Blueprint of Intelligent Hospital

Yuanlin Christian Hospital - A Benchmark for Intelligent Hospitals

Ordering Information

<table>
<thead>
<tr>
<th>Solution Package</th>
<th>iWard SRP Optimizing Nursing Care and the Patient Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solution Type</td>
<td>Edge Computing</td>
</tr>
<tr>
<td>1. Nursing Dashboard</td>
<td>DS-780</td>
</tr>
<tr>
<td>2. Control Center</td>
<td>HIT-W183</td>
</tr>
<tr>
<td>3. Patient Information Terminal</td>
<td>HIT-W183</td>
</tr>
<tr>
<td>7. Mobile App</td>
<td>USM-110W</td>
</tr>
<tr>
<td>8. Real-Time Location System</td>
<td>LEO-21</td>
</tr>
</tbody>
</table>
Application Story
Yuanlin Christian Hospital - A Benchmark for Intelligent Hospitals

Yuanlin Christian Hospital (YCH) is a new medical institution affiliated with the Changhua Christian Hospital that holds a significant place in the history of medicine in Taiwan. Specifically, YCH was the first ever intelligent hospital in Asia to integrate intelligent systems with patient services, medical procedures, and energy management. The hospital not only provides all the convenience and functionality of a modern healthcare facility, but also marks Taiwan’s transition into an era of fully intelligent medicine.

Intelligent Wards Bring Patients and Nurses Closer Together

Traditional wards typically feature nurse call buttons or phones for patients to communicate with nurses. However, these buttons/phones do not offer instant notifications, which can lead to long wait times and patient mistrust of nursing staff. By contrast, YCH wards have been fitted with bedside information terminals that feature touch-controlled nurse call buttons for contacting nurses with a single touch. The electronic messaging system then notifies all on-call nurses, regardless of their location, of the request for assistance via an instant message sent to their hand-held device (mobile phone or tablet PC). Patients wishing to order a meal or adjust their medication no longer have to make in-person requests at the nurses’ station. With a single touch of their nurse call button, they can send a message to the nurses’ station. The electronic messaging system also reduces the risk of errors or forgotten requests.

Blueprint of Intelligent Hospital

Ordering Information

<table>
<thead>
<tr>
<th>Solution Type</th>
<th>Edge Computing</th>
<th>LAPP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursing Dashboard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control Center</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient Information Terminal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bedhead Information Terminal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vital Sign Measurement Automation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medication Management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mobile App</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Real-Time Location System</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Solution Package

1. HIT-W183
2. AIM-55
3. LEO-910
4. HIT-W101
5. AMiS-50E
6. USM-110W
7. USM-500-W7853M
8. DS-780
9. AIM-55AT-10103000
10. LEOM-910
11. AMiS-50E-1M1K2NE-C
12. AMiS-50P1A1-S1E-C
13. HIT-W101HWIB-B1E-C

Advantech Headquarters
No. 1, Fuhua Rd., Jhongli Dist., Taoyuan City, Taiwan 32446
Ph: +886-3-661-1011 / 1012
Fax: +886-3-661-1013
Advantech Co., Ltd.
5F, No. 1, Fuhua Rd., Jhongli Dist., Taoyuan City, Taiwan, R.O.C.
Ph: +886-3-661-1011 / 1012
Fax: +886-3-661-1013
www.advantech.com

© Advantech Co., Ltd. 2020