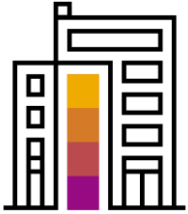




SAP® Innovation Awards 2020 Entry Pitch Deck

Revolutionary aluminum foils - UACJ's unique solution of medication tracking system

UACJ Corporation



Company Information

Headquarters	Tokyo, Japan
Industry	Mill Industry
Web site	https://www.uacj.co.jp/english/index.htm

Company Principles

In order to implement our management philosophy, the UACJ Group acts according to the following principles, and promotes an organizational structure in line with these precepts.

1. We will strive for active and impartial communication with all of our stakeholders, and will always place stakeholder trust first when acting.
2. We will act according to strict ethics, comply with laws and regulations, and proactively contribute to the environment and society. We will avoid all connection with criminal or subversive elements, and fulfill our responsibilities as a corporate citizen.
3. In order to earn our customers' satisfaction and trust, we will tirelessly strive to improve our quality, technical and on-site expertise.
4. We will nurture staff by creating safe and positive work environments.
5. We will consistently adopt a global and long-term outlook, and adapt flexibly to changes in the business environment, such as globalization. We will respect the laws, cultures and customs of each country, and contribute to the development of their societies.

Medication tracking system with revolutionary aluminium foils

UACJ



UACJ, DOCTORS and SAP have different roles and capabilities in managing medication information, I think that a great strength is that a series of points complement each other. This technology has potential for various stakeholders in medicine industry. I want to involve various people on this platform.

- Takamichi Watanabe,
Foil Product Development
Section Manager,
Converted Foil Innovation
Project Leader, UACJ

Challenge

- Increased medical expenses is an urgent problem for several countries, especially the ones facing rapidly-aging population. Increased leftover medicines also contribute towards growing medical expenses.
- Integration of patients' medication data to find the root cause

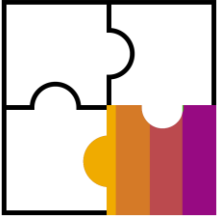
Solution

- "Medication Tracking" system using *aluminum foil with an electric circuit*, which can detect the opening of medicine package. It sends the status to the IT platform integrated with it. The collected data can be utilized for seamless medicine management.

Outcome

- By analyzing the collected data, ascertain the reason behind leftover medicines and reduce them
- Not only maintain patients' health but also enhance the sense of security for all the related people, e.g., patients, patient's families, pharmacists, doctors and nurses, elder-care service providers





Participating Partner Information

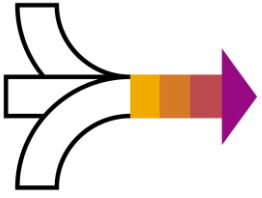
DOCTORS Corporation

DOCTORS is a company that provides service through a network of active medical specialists and with the support of digital medical platform. DOCTORS contributes to support UACJ in planning and managing the demonstration protocol, consolidate the opinions of healthcare professionals, and provide feedback.



Companies make great things with great technology. However, whether it is useful in the medical field is another matter. I hope if we DOCTORS can help this initiative very much. As for making this new IoT solution, I believe there are some breakthroughs.

- Takao Yanagawa, President & CEO of DOCTORS, Brain surgeon



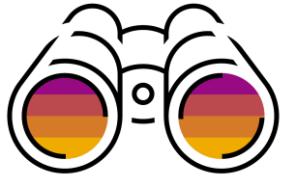
Business Challenges and Objectives

- “Leftover medicines” is one the biggest factors in the increase of medical expenses, and reduction of medical expenses is an urgent requirement from the viewpoint of “spending tax”
- One of the biggest reasons for “leftover medicines” is repeated missing dose. So, it is required to find the root cause why repeated missing dose has occurred continuously.

To solve leftover medicine problem, a powerful consortium has been launched, comprising UACJ as advanced aluminum manufacturer, DOCTORS as medical expert, and SAP as business platform provider. This will finally bring tremendous value to society, so that everyone lives a healthy life. Our goal is live deployment by 2022 of an integrated production system, comprising:

- Aluminum foils with electric circuit
- Business platform to collect the sensed data from the aluminum foil
- Apps for communication between patients and pharmacists/doctors, not only for the correct medication, but also for giving the sense of security to patients and patients’ families.





Project or Use Case Details

Revolutionary aluminum foils as “medication tracking” system

Project Timeline:

1. November 2019 1st phase of Proof of Concept with limited stakeholders
2. July 2020 2nd phase of Proof of Concept with various stakeholders, including partially go-live as paid service with specific stakeholders
3. April 2022 Live deployment as “fully-paid service”

How it Currently Works:

- Broken aluminum foil data is detected through a communication device and is sent to the platform
- Mockup of apps for patients and pharmacists/doctors is ready, which we use to collect usability feedback from limited stakeholders

In the Mid-Term:

- Medical experts such as pharmacists/doctors can utilize the “integrated production system” for the optimized medication, not only to reduce leftover medicines but also to give patients and patients’ families the sense of security with the communication apps.

In the Long-Term:

- We would like to enhance the collaboration and make it industry-standard



Benefits and Outcomes

Business / Social

- UACJ's business transformation from Aluminum products manufacturer-to-value provider of human-centric business model and as a social contributor...
- ... Utilizing printed circuit foil for providing healthcare services, through a "medication management platform"...
- ... that helps in achieving *correct medication* leading to a reduction in *remaining medicines* and *medical costs*...
- New business model will lead to enhanced revenues for UACJ

IT

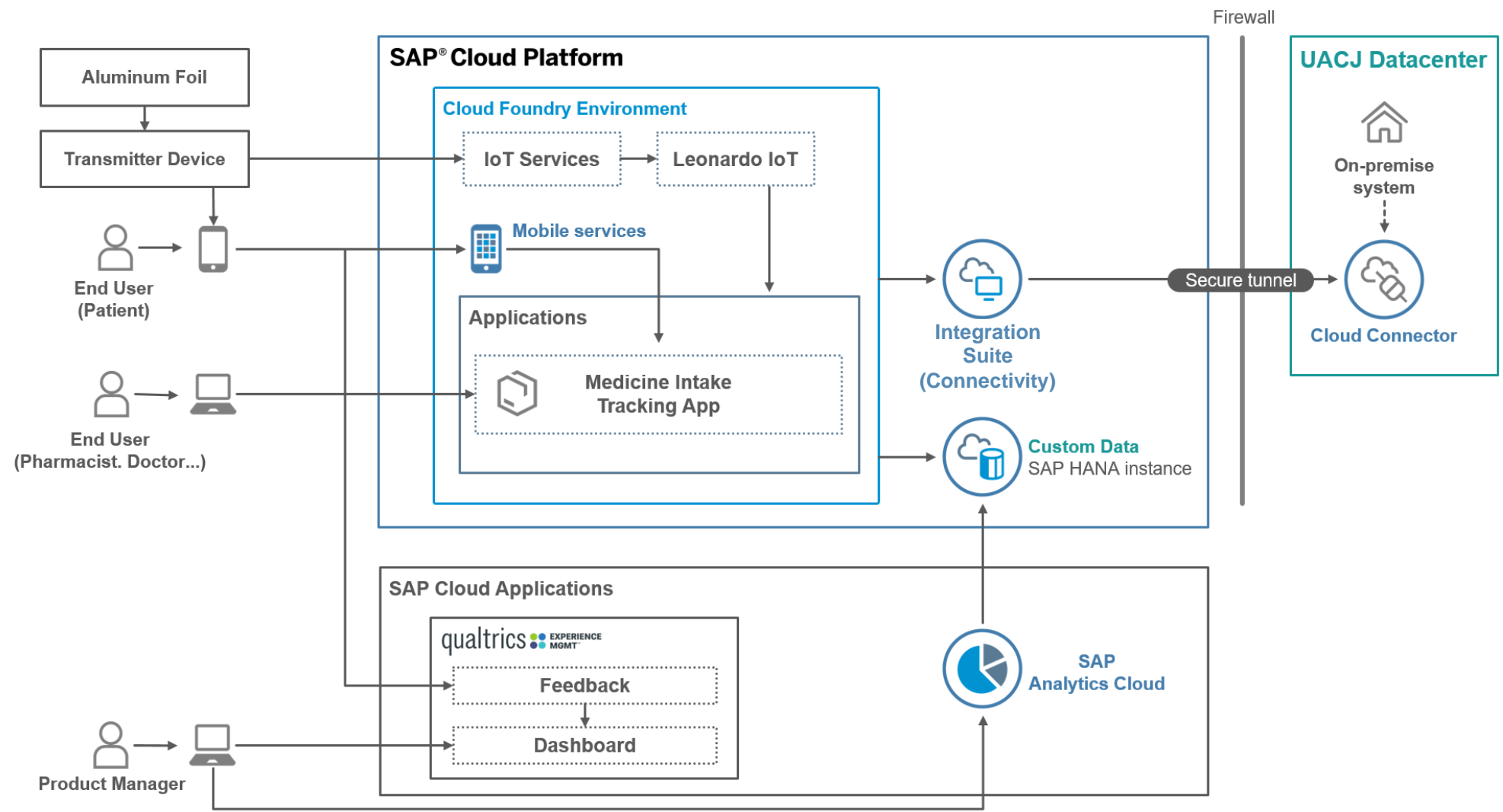
- Realize IoT by printing electrical circuits on aluminum foils (in tablet packaging) with detection and communication functions. When a medicine is opened, patient's family and/or doctor will be notified through the smartphone.
- Data visibility and analytics regarding prescription vs actual medication
- Platform of communication across patients, healthcare professionals, patients' families and elder-care service providers. By collecting "pharmaceuticals opening information" on the platform, the actual situation of medication is known.

Human Empowerment

- Reduce patients' frequency of forgetting to take medicine by the most suitable prescription analyzed the patients' medication history, which will lead to reduce the number of leftover medicines
- Enhance patients' and their families' sense of security by appropriate feedback from doctors and pharmacists and improve their satisfaction
- Determine the cause of residual medication and allow doctors and pharmacists to provide correct medication guidance



Architecture





Deployment

Deployment status PoC

Date 01/11/2019 (PoC), 07/2020 (Partial go-live), 04/2022 (go-live as paid service) Number of users Limited stakeholders at the moment (10+ doctors)

SAP technologies used:

	SAP product	Deployment status (live or proof of concept [POC])	Contribution to project
1	SAP Cloud Platform	PoC	Collect sensed data from broken aluminium foils through open connectors; build Fiori apps
2	SAP Analytics Cloud	PoC	Advanced analysis on patient medication status, medication schedule and performance
3	SAP Qualtrics	Live	Collect and analyse stakeholders' voice through their experience of the service, e.g. physicians / patients / nurses / pharmacies
4	SAP Cloud Platform Integration Suite	Live	Connectivity

If you have used one of the services or support offerings from SAP Digital Business Services during the implementation or deployment phase, please select with ☒ one or more of the following offerings:

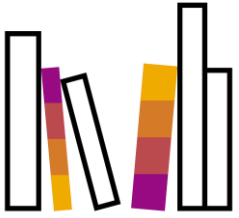
- ☐ SAP MaxAttention™
- ☐ SAP ActiveAttention™
- ☐ SAP Advanced Deployment
- ☐ SAP Value Assurance
- ☐ SAP Model Company
- ☐ Others:
- ☐ SAP Innovation Services
- ☐ SAP Innovative Business Solutions



Advanced Technologies

The following **advanced technologies** were part of the project.

	Technology or use case	Yes or No	Contribution to project
1	3D printing	No	
2	Blockchain	No	
3	Internet of Things (IoT)	Yes	The signal is detected from medicine's aluminum foil (with electric circuit) when it is opened (broken). This data is integrated with SAP Cloud Platform.
4	Machine learning or AI	Yes	Machine Learning in SAP Analytics Cloud (SAC) provides reactive and predictive insights such as missing dose trend. It could lead pharmacists / doctors to take action in advance for preventing repeated missing dose.
5	Conversational AI	No	
6	Robotic process automation	No	
7	Data anonymization	Yes	Protection of patients' personal data
8	Augmented analytics	No	



Additional Information

- Project introduction video: <https://youtu.be/4052crQ3llc>
- Demo image video: <https://vimeo.com/381512940#ext123>
(Note) This is WIP and will be finalized in Jan 2020.
- Eckhardt Siess, Global Vice President, IBU - Mill Products & Mining, is executive sponsor of this project.