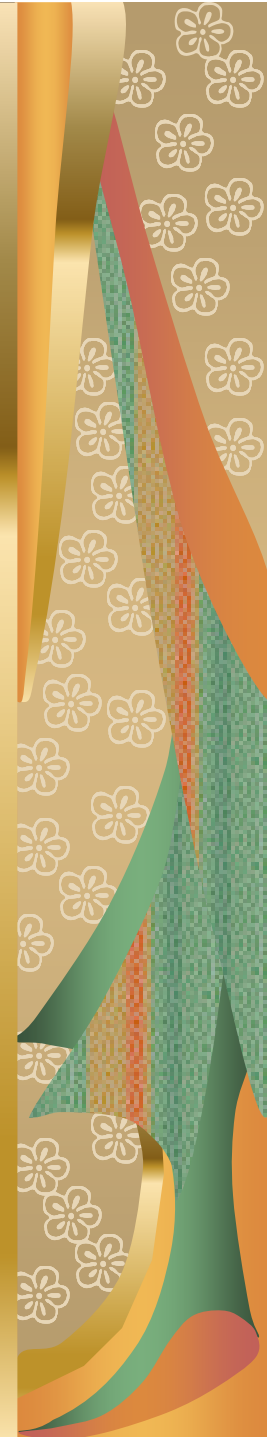




# Two Dimensional Matrix Code Symbol Pursuing Patient Safety

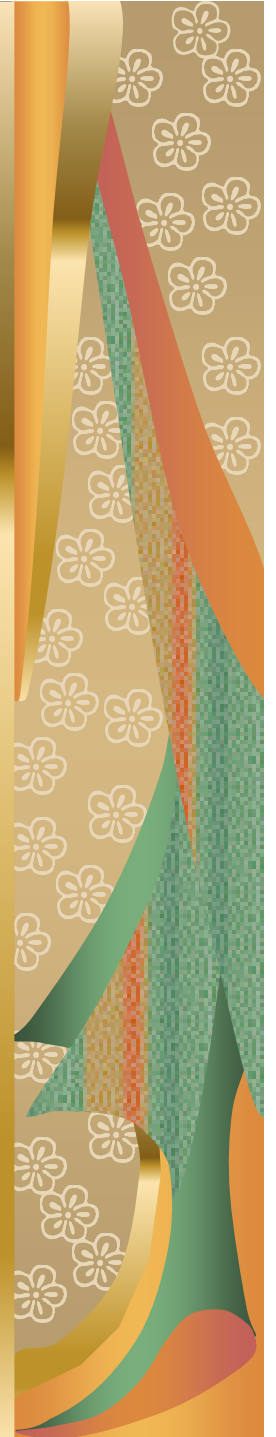
GS1 Healthcare Conference  
London, UK

Ryuichiro Azuma  
SAKURA SEIKI CO., LTD



# Background

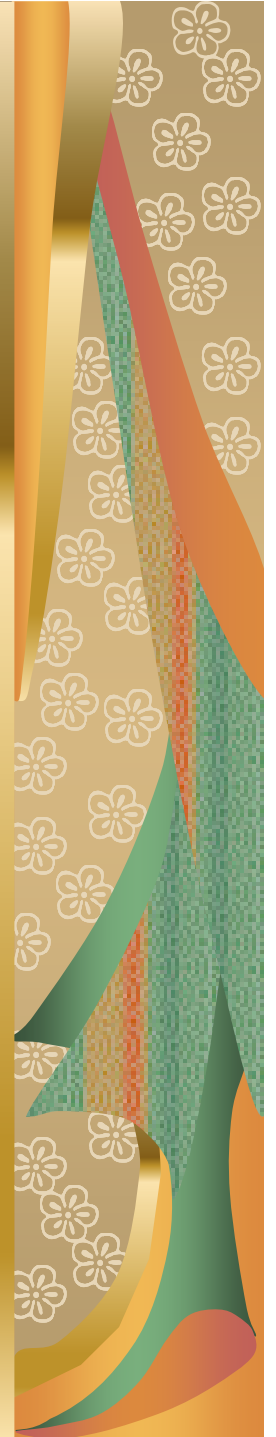
- Development of an uniform system of unique identifiers such as 2D symbol for medical devices is required worldwide.
- Medical devices vary from rather big objects such as MRI to small objects such as needles.



## Background (2)

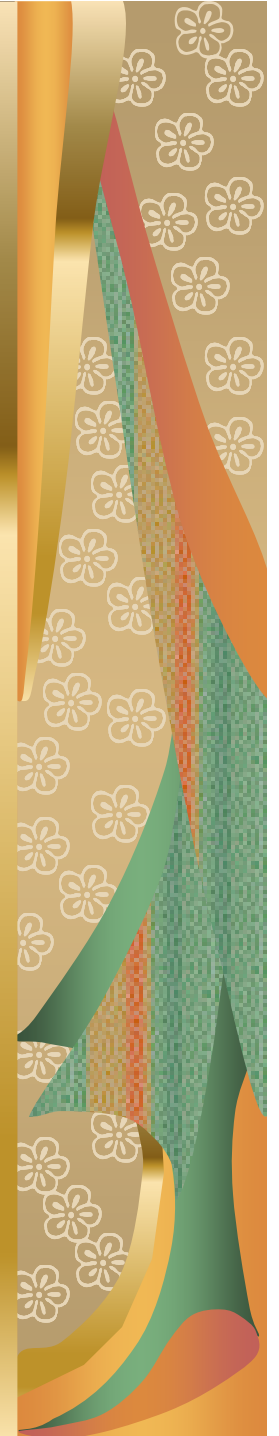
■ Dr. Seizoh Nakata at Osaka University Hospital, Osaka, Japan was very enthusiastic to introduce 2D symbol on their every surgical instrument as a way to improve patient safety which includes:

- a) To facilitate more effective device recalls
- b) To facilitate the population of device use information in digital record system
- c) To improve materials management and save associated materials cost



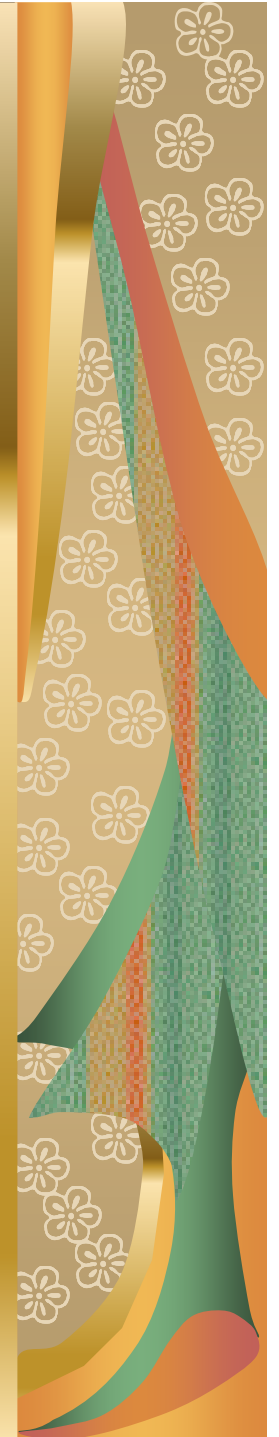
# Challenges

- **Size** of surgical instrument particularly neurosurgical / ophthalmology instrument
- **Shape** of instrument – Round surface
- **Material** of instrument – Stainless Steel, Silicone Rubber, Glass, etc.
- **Rusting** effect
- **Accurate** and **no-stress** read response



# New Technology

- 1mm x 1mm 2D Symbol by Yag laser ⇒ **Any** tiny instrument.
- Accurate and immediate reading result ⇒ With **no** stress
- No adverse rusting effect w/less engraving depth and width than mass of water mol. ⇒ 2 years up
- The 2D Symbol contains 16 bytes without being damaged by washing and sterilization.

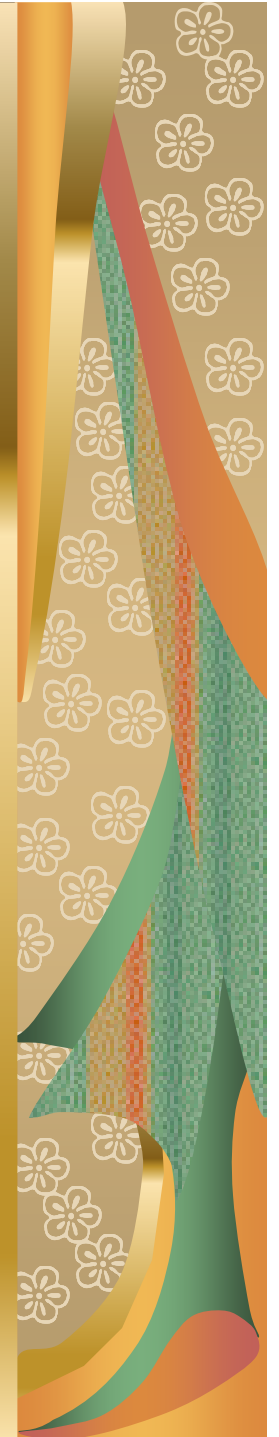


# Utilization of the new technology (Example) **smith&nephew**

- In December, 2006, Smith & Nephew Orthopedic KK, Japan introduced the new technology to apply to their orthopedic loan instruments, particularly onto Leamer.

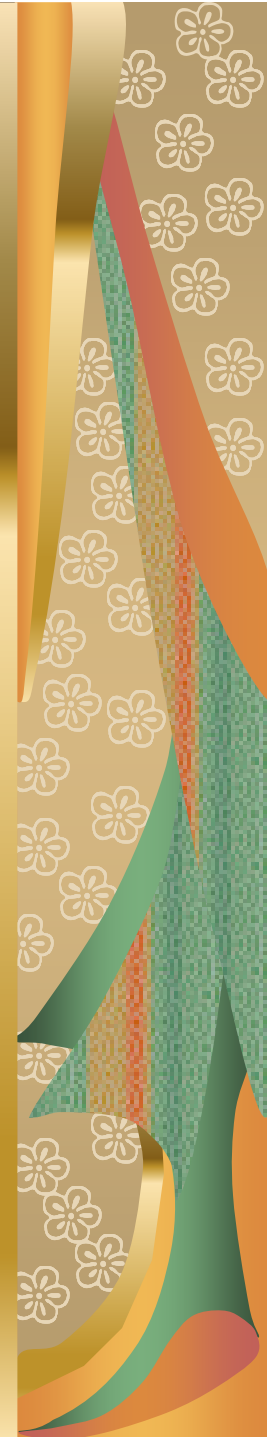
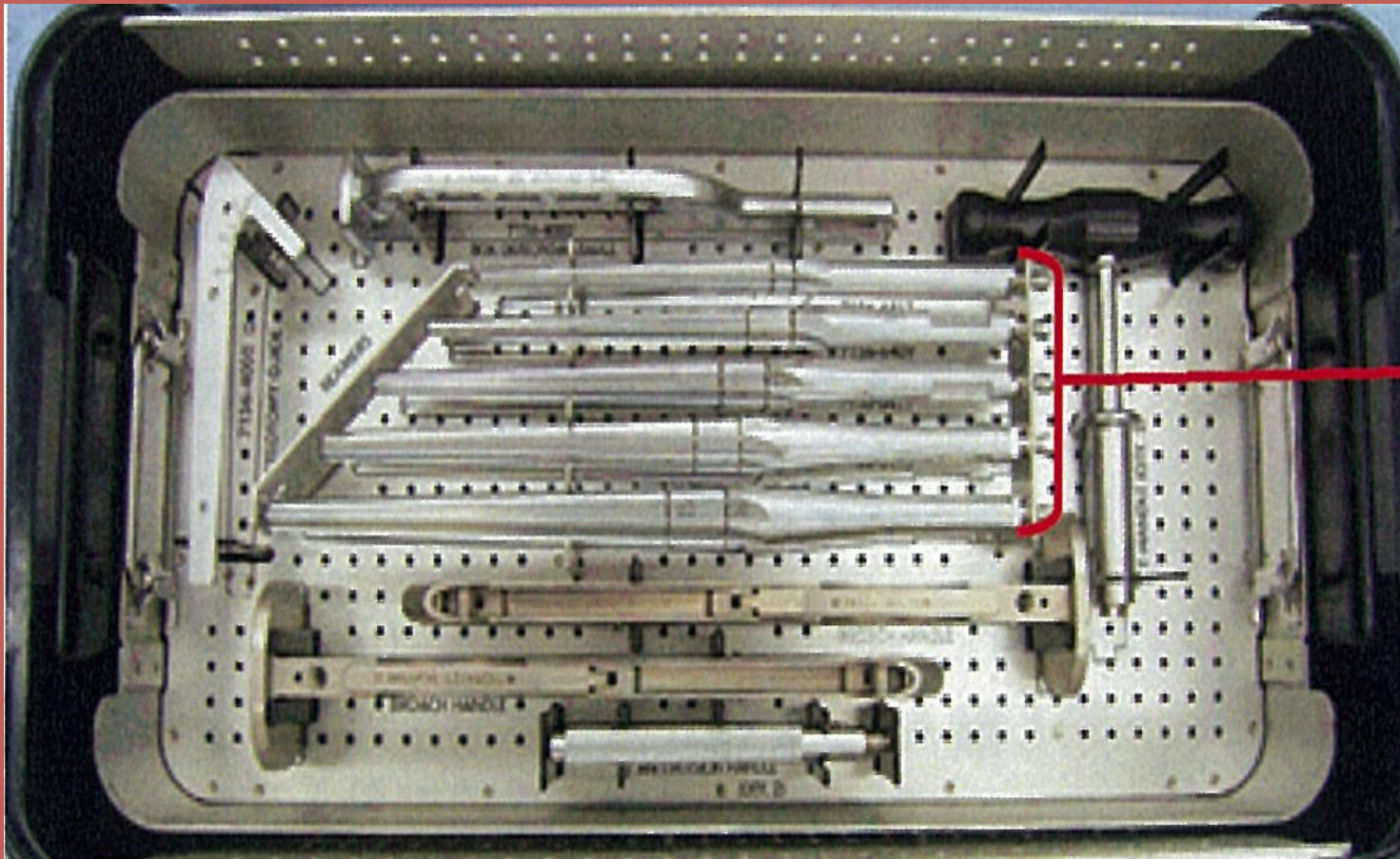
Why Smith & Nephew Japan?

By MHWL's notice, Orthopedic loan instruments are required to be monitored for cycle time of use, etc. The new technology enables them to effectively accommodate the requirement.





# Example of Loan Instrument Set

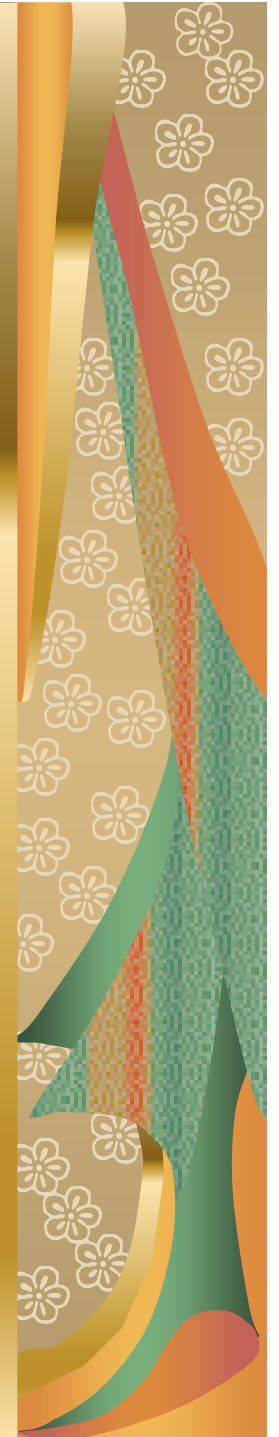


# On Site Video – 2D Symbol

## Electronic Data Processing and Surgical Instrument Tracking in Osaka University Hospital

"Exploring the Two-Dimensional Matrix Code Symbol  
: An International Discussion"

**Seizoh Nakata**  
Osaka University  
Hospital  
Japan



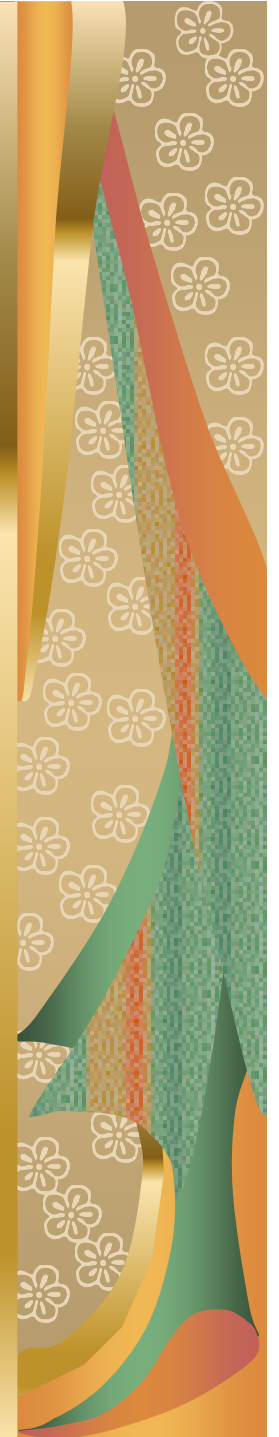


# Other Examples

## Introducing into other industries

Origin of this technology was used in automobile, electric and aero industries and the advanced technology for healthcare application are applying to these industries.

Toyota and Nikon are the companies utilizing the technology in their production line for their QA control.

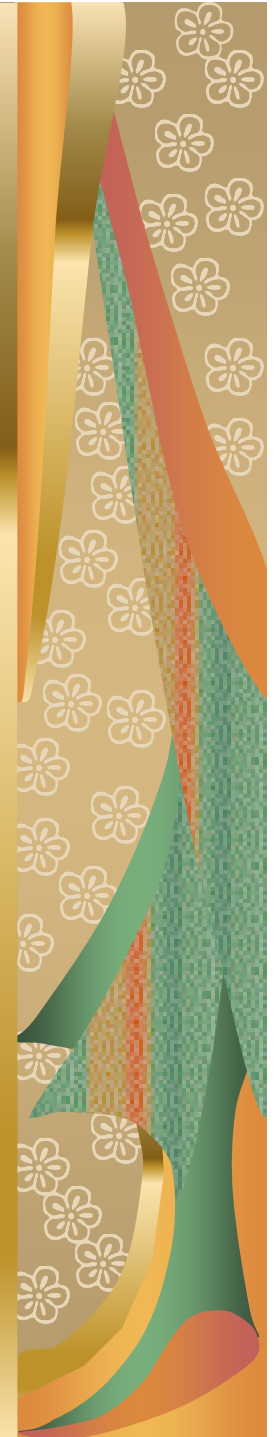


# Other Example

## ■ Application to Pathology / Cytology field

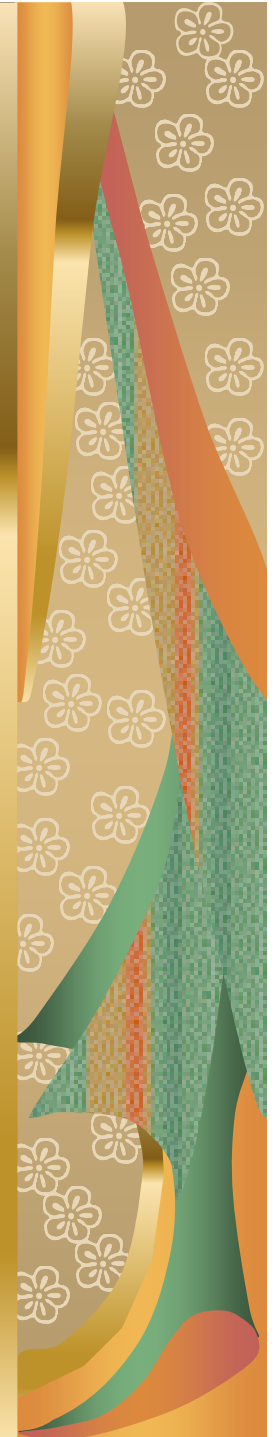
The 2D symbol is engraved onto specimen slide glass and even onto cover glass (0.13mm), which enables to avoid medical error.

These glasses were tested under the temperature between -30 to 100 degree C. with no adverse event such as crack, etc.



# QR Code for the Japanese Healthcare

- **Guideline:**  
JAMEI (Japan Association of Medical Equipment Industries) issued Guideline in November, 2006
- **Objective:**  
Patient safety, Traceability/Recall & Asset Management
- **Metal Apparatus:**  
Made of stainless, Aluminum, Copper alloy, Titanium, Ceramics, etc.
- **Symbol:**  
Data Matrix (ISO/IEC 16023) ECC 200  
or QR Code (ISO/IEC 18004)
- **Data:**  
AI (01) 14 digits GTIN  
AI (21) 8 digits Serial Number
- **Issue:**  
Validation methods need to be determined and performed



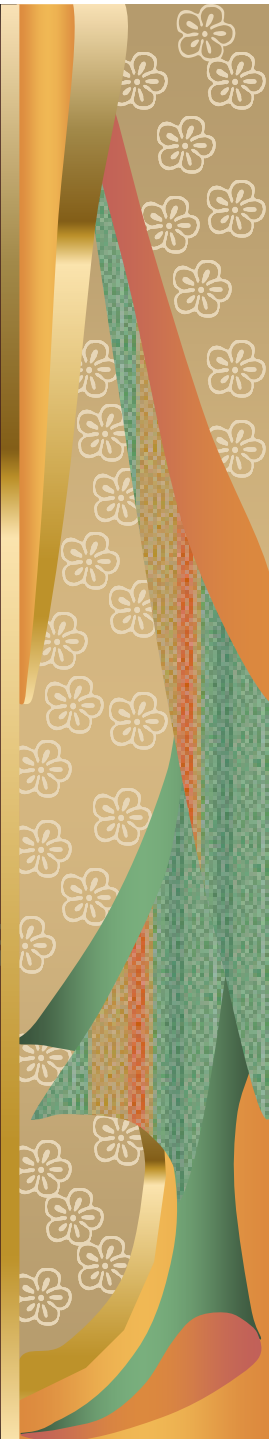
# Application of QR Code to Healthcare



Blood Sample used in laboratory



Surgical Instrument (Trial Application)



Thank you for your attention!



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