Application of an RFID tag to medical equipment management support

- Construction of an operation manual system for medical equipment -

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Introduction

Medical equipment is essential for present medical services.

Safety management of medical equipments in a perfect state

Treatment for patients

Security

Important and indispensable
for prevention of medical accidents

Targets of the development system

1. Centralized management of information of medical equipments
2. Recording use / maintenance histories of medical equipments → **Improvement of accidents Prevention accidents**
3. Making a database for medical equipments
4. Managing sterilization / disinfection of medical equipments by patient information → **Quick and efficient works**
5. Lending / return works of machinery in a lump → **Improvement of safety in use**
6. **Reading of information such as manual one**
7. Traceability → **Alibi management**
8. Planning assets management → **Rationalization of hospital management**

Hardware 1

- **RFID tag reader/writer**
  - (a) Table type
    (made by OMRON - V720-HS03)
  - (b) PDA type
    (made by OLYMPUS - pt1016 ticzizjp-c)

(a)

(b)

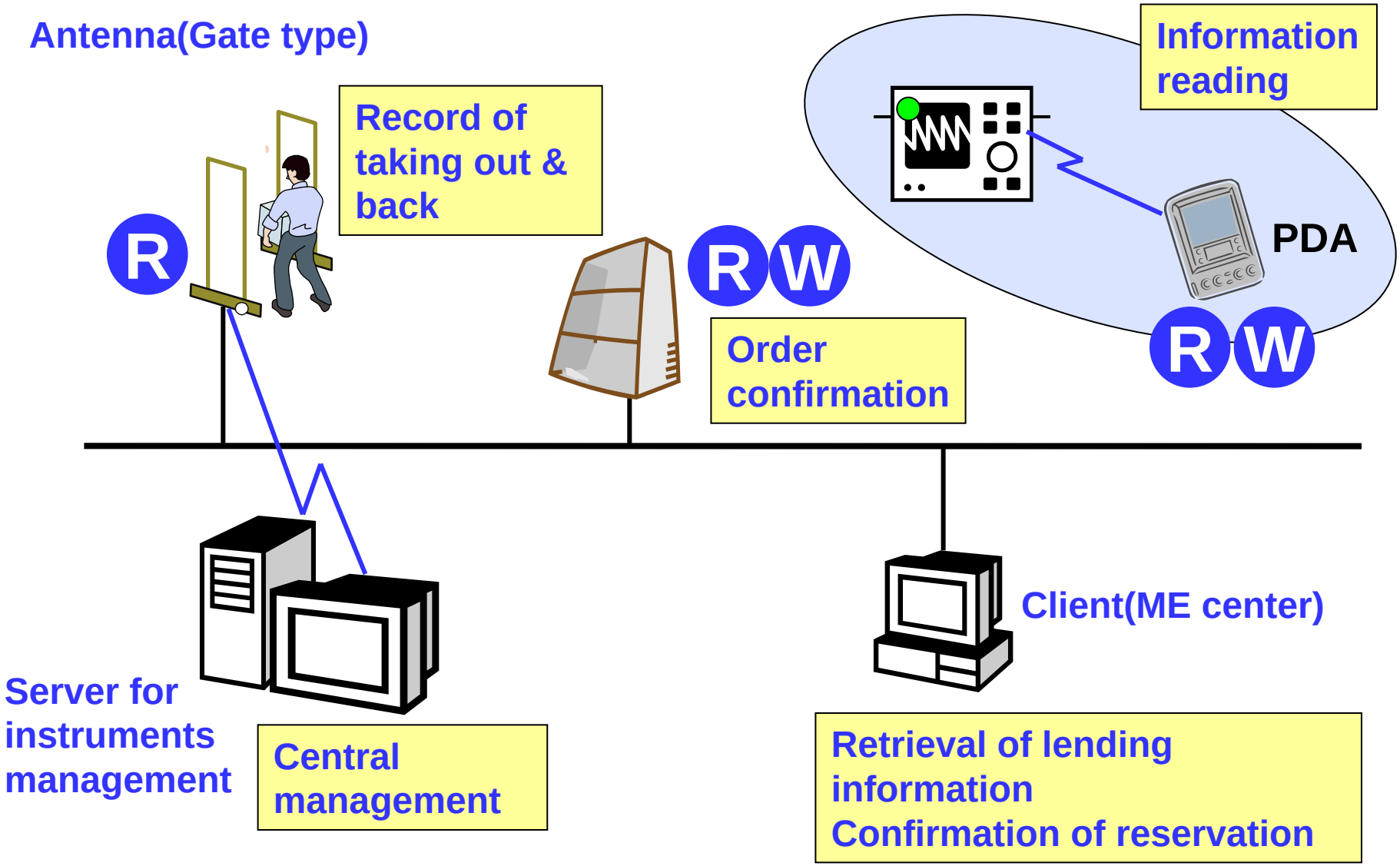
- **RFID tag**

  - Use for medical equipment ･･･13.56MHz / Label type for metal
  - Nameplate for medical personnel ･･･13.56MHz / Card type

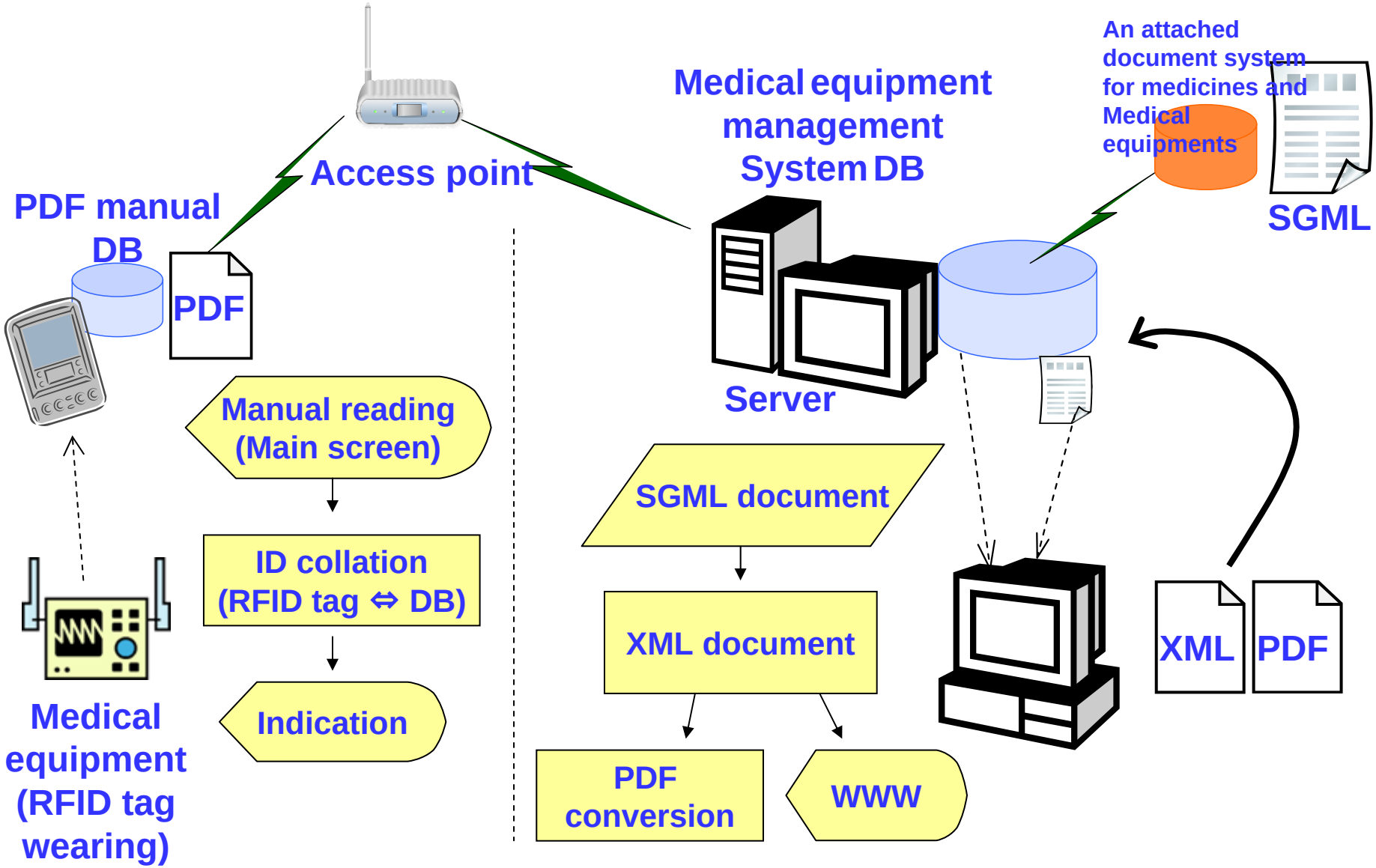
Software and Others

- An operation manual system for medical equipments

- **Form design**
  - Adoption of nurses' opinions
  - Choice of the information for the manual by clinical engineers
- **PDF file**
  - Use of Adobe Reader for Pocked PC2.0
  - The file made with the tag (A bookmark function)



System composition (ME Center)



Manual information referring system for operation

Results

Investigation of the function of the basic system - PDA terminal operation -

- Operationability / Function …Good

  A check function of equipments at the opening work promotes careful operation.

- Operation manual …Referable at the bedside

  The screen is small, but necessary information can be read

Improvement of safety by the developed system

- Reference of an operation manual at the bedside with a PDA terminal
- Check operation at the opening / closing work with a PDA
- Information for sterilization / disinfection of equipments from the infectious disease information of the patient

Advantage of an operation manual system for medical equipments

- **Improvement of Efficiency of the manual making work**
  - Using the information of machinery DB and the attached document information
  - Facilitating reedition work by adoption of XML
- **Improvement of the screen operation**
  - Realizing the quick and efficient screen operation by the PDF file with the tag
- **Reading manual information in the area available for a wireless LAN**
- **Acquirement of every information at the bedside**

Conclusion

In this study, a safety management system for medical equipment including a manual referring system for operation was successfully developed by applying an RFID and the system was thought to be useful from the result of a trial.

In the next place, we have a plan to build the system on a full scale and confirm the utility of the system by installing it in a hospital.

References

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