

①D-RANS Encryption Software

②D-RANS PROXY Software

③D-RANS Software Module for Cache DataBase

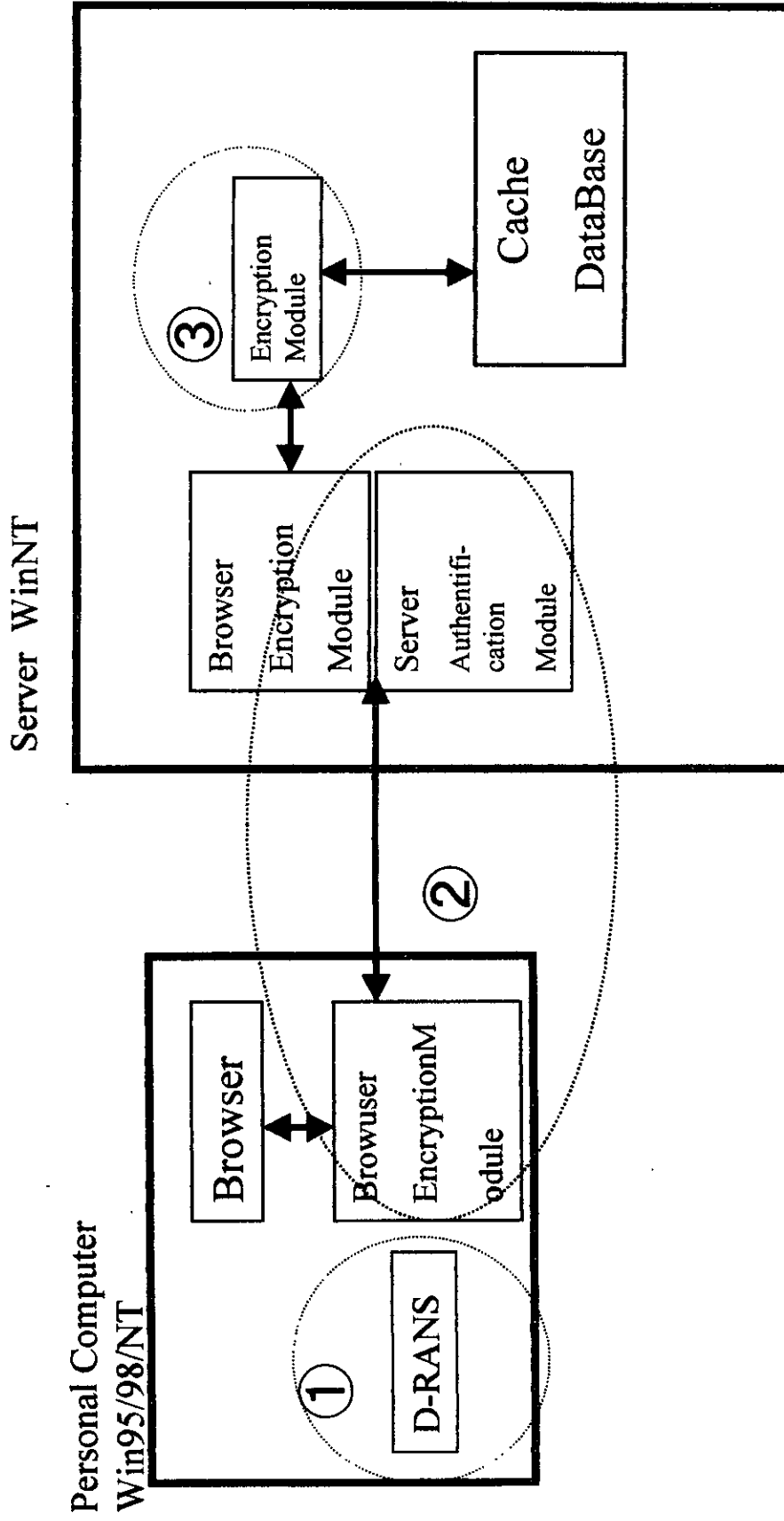
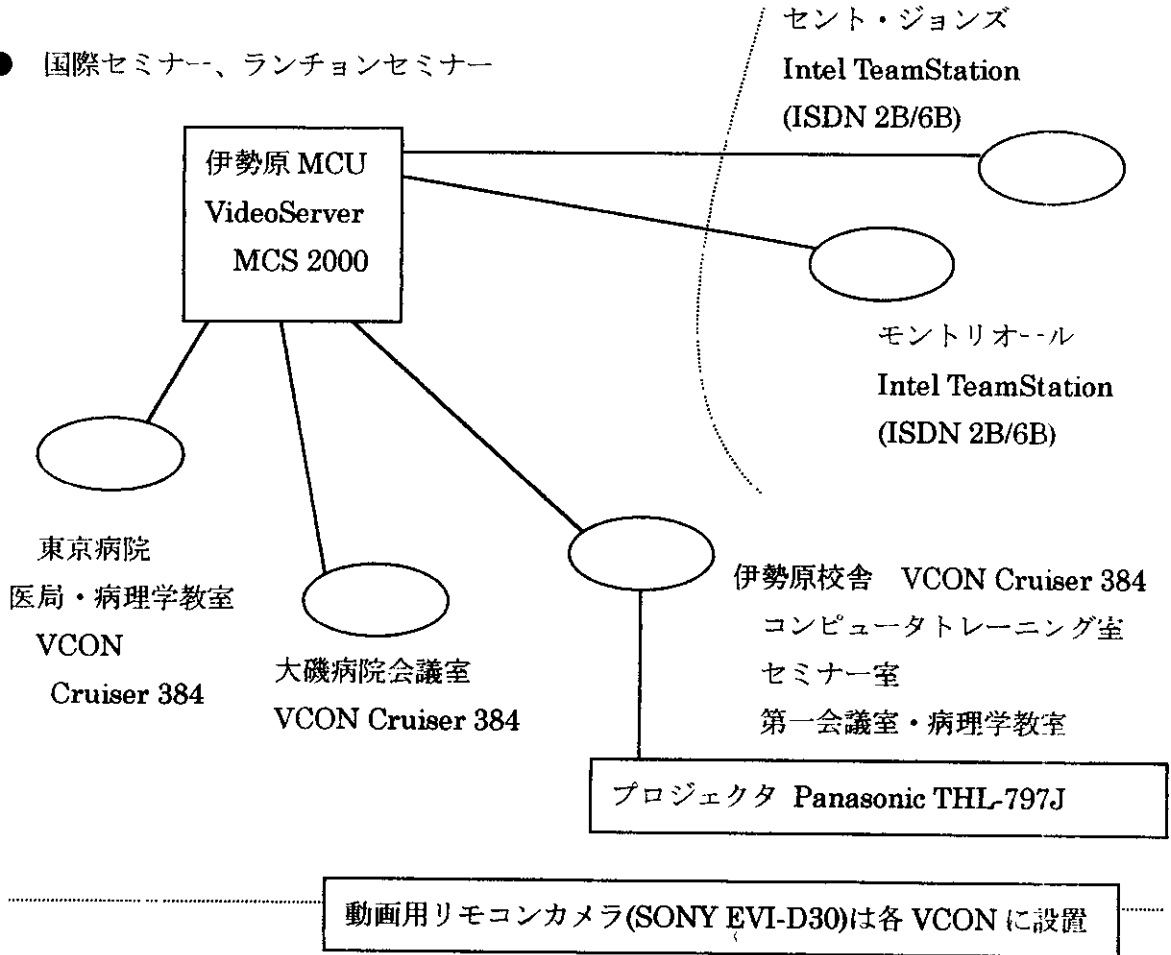


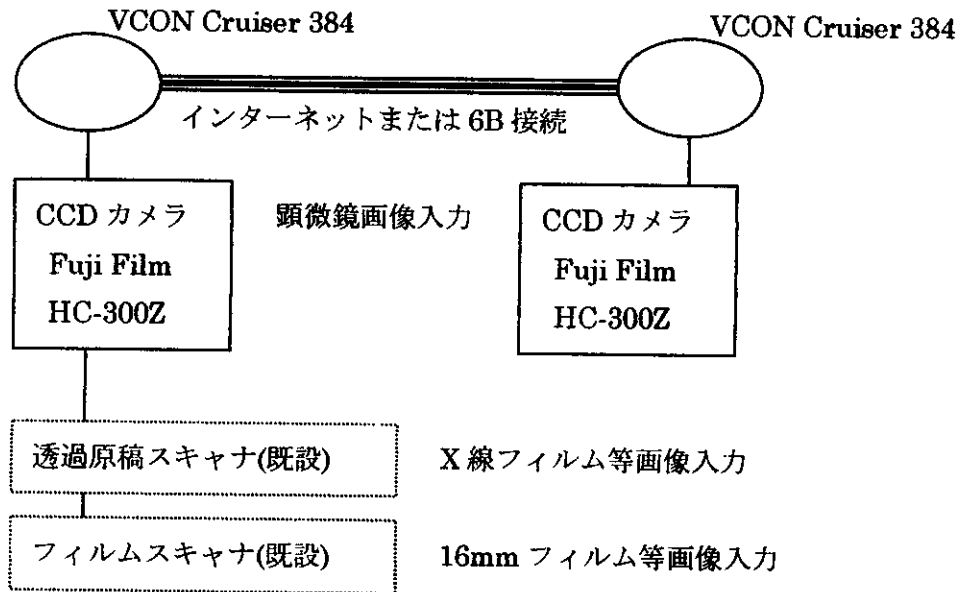
図 4

システム構成図

● 国際セミナー、ランチョンセミナー



● 静止画・動画実験系



資料

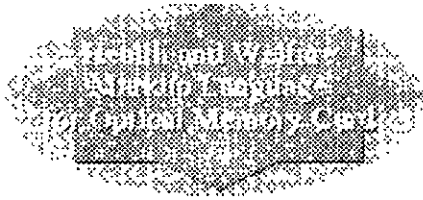
## HWML 資料

詳細は次のサイトを参照して下さい。

[http://www.miyazaki-med.ac.jp/IIKARI/Index0\\_0.htm](http://www.miyazaki-med.ac.jp/IIKARI/Index0_0.htm)

<http://www.hikarus.com>

<http://mi.med.u-tokai.ac.jp>



MSRF

# 保健・医療・福祉用光カード

## 記述規格 Version 1.01

診療システム研究フォーラム  
光カード記述標準化分科会

初版 1999年 3月 x日

変更点:(1999年2月6日以降)

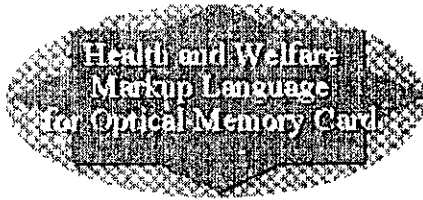
- |       |          |   |
|-------|----------|---|
| 3     | ファイル名の定義 | インスタンス定義のうち、MML準拠・独自の区別を追加                  |
| 4-2-2 | エレメント    | 終了タグの省略を不可に                                 |
| 5-3-5 | タグ名      | NOTEをMEMOに変更                                |
| 5-3-6 | タグ追加     | BLOODTYPE-ID-TYPEを追加                        |
| 5-4-2 | 補足説明     | MMLとの相違点を明記                                 |
| 5-4-4 | 補足説明     | MMLとの相違点を明記                                 |
| 8     | コードテーブル  | 国別ドメイン名(ISO3166)の追加<br>Ver1.01で試験的な採用にとどめる。 |
| HL7   | 扱い       | MML形式を主体とし、参照先の外部テーブル記述は今後まだまだ検討の余地がある。     |
| その他   | 年齢表記     | LLL[MM[DD]]LLL才月齡MM日齡DD                     |
|       | 日付表記     | YYYYMMDDをYYYYLLDDに変更                        |

Home

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7. 画像ファイルの定義
8. 補足



# 保健・医療・福祉用光カード 記述規格 Version 1.01

## 1. はじめに

光カードは、現在のところ、最大約 6MByteの容量を持つカード型の記録メディアである。光カードは物理的に追記し、記録された情報を修正することができないことから、医療情報や健康情報の記録に適している。近年、医療、保健および福祉の分野において、光カードの応用が広く検討されるようになり、すでに、医療、健康情報の記録を行うコンピュータシステムが稼働を開始している。しかし、現在のところ複数のシステムで記録されたカード上の情報に互換性が保たれていないのが現状である。

我々は、平成10年1月から、異なった複数のシステム間で光カードの記録情報を共有する目的で、記述規格の整備を検討してきた。HWMLomc(Health and Welfare Markup Language for optical memory card)は、保健－医療－福祉情報を光カードに記述する際に共有する情報の記述を定義した統一規格である。この規格は公開し、社会的要求および採用するシステムに合わせて進展させてゆくべきであると考え。我々は、光カードの利点を有効に活用し、幅広く普及させることは、カードの所持者たる国民の健康の維持増進に寄与するものであると確信している。

### HWMLomc検討委員(あいうえお順)

荒木 賢二	宮崎医科大学付属病院医療情報部
大橋 陽一	東海大学医学部医学情報学教室
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# 保健・医療・福祉用光カード

## 記述規格 Version 1.01

### 2. ファイルシステムの構造

光カードは、他のファイルシステムと同様にディレクトリを作成し、階層構造を構築することができる。記録される情報のうち、複数施設、複数システム間で共有する情報は、ディレクトリ名やファイル名を統一する必要がある。

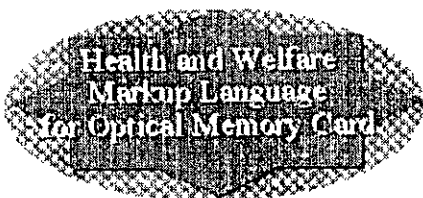
#### 2-1ディレクトリ定義

ディレクトリ階層構造を表1-1に示す。ディレクトリ名称は大文字の英字とする。

表1-1. 光カード上のディレクトリ構造

ディレクトリ名	情報の種別	概要
¥(Root Directry)	基本情報	個人基本情報、健康保険証情報など
☐COMMON	共通情報	診療施設情報、生活習慣、予防接種など
☐MEDICINE	医科情報	医科診療履歴、診断など
☐DENTAL	歯科情報	歯科診療履歴、診断など
☐HEALTH	健康情報	健康診断履歴など
☐WELFARE	福祉情報	ケアプラン、サービス、各種認定情報など
☐EXAMINATION	検査・測定情報	検査オーダー、測定結果
☐PRESCRIPTION	処方投薬情報	処方オーダー、調剤、実施結果
☐IMAGE	画像情報	画像検査、所見画像など

EXAMINATION、PRESCRIPTION、IMAGEのディレクトリは医科、歯科、健康、福祉分野で生じる該当情報を一元的に記録する。この構造により効率的に参照することができる。



# 保健・医療・福祉用光カード

## 記述規格 Version 1.01

### 3. ファイル名の定義

本規格はSGML(Standard Generalized Markup Language)のインスタンスであるMML (Medical Markup Language)で定義される書式に準じて作成されている。また、検査情報および処方投薬情報に関しては、HL7(Health Level 7) Version 2.3を参考とした。

共有する情報は、複数のインスタンス(ファイル)に分類して記録する。インスタンスには、時間要素とともに個々に残す履歴情報と、有効なインスタンスがひとつである単一情報とに大別される。履歴情報は前項のディレクトリの下層に、単一情報はルートディレクトリ上に記録される。

インスタンスの種類は、ファイル名の末尾にピリオド(.)で区切られた大文字の英字3文字(識別子)で識別する。

単一情報は、HWML. 識別子 とし、履歴情報は日付[時間](YYYYMMDD[HH[MM[SS]]])、施設ID(fid)、識別子)とする。([ ] 内は省略可能を意味する。)

施設ID(fid)の参照インスタンスとして、COMMONディレクトリ下に施設ID(fid)、FIDのファイル名を持つ施設情報を記録する。

MMLインスタンスおよびHL7セグメントのファイル名を表2-1. に示す。MMLの規格に準じているインスタンスは斜体、一部拡張しているインスタンスは太字で示す。画像のファイル名に関しては6章で定義する。施設ID(fid)の扱いに関しては補足2を参照されたい。

表2-1. インスタンス定義

ディレクトリ名	File Name	Instance	Description
*(Root Directry)	HWML.OMC	OMC-INFORMATION-SECTION	カード発行者情報
	HWML.PID	PERSON-ID-SECTION	個人属性情報
	HWML.HEI	HEALTH-INSURANCE-SECTION	健康保険証情報
	HWML.WAS	WELFARE-APPROVED-SECTION	介護・障害等認定情報
	HWML.BII	BIRTH-INFORMATION-SECTION	出生時情報
	HWML.ALR	ALERGY-SECTION	アレルギー情報
	HWML.BTY	BLOODTYPE-SECTION	血液型情報
	HWML.INF	INFECTION-SECTION	感染症情報
□COMMON	HWML.FHS	FAMILY-HISTRY-SECTION	家族歴情報
	fid.FID	FACILITY-ID-SECTION	施設情報
	ts.fid.LIF	LIFESTYLE-SECTION	生活習慣情報
	ts.fid.PRG	PREGNANCY-HISTRY-SECTION	妊娠歴情報
	ts.fid.VCN	VACCINATION-SECTION	予防接種情報
	ts.fid.BTR	BLOODTRANSFUSION-SECTION	輸血歴情報
□MEDICINE	ts.fid.PHS	PAST-HISTRY-SECTION	既往歴情報
	ts.fid.RGD	REGISTERED-DIAGNOSIS-SECTION	医科病名診断情報
	ts.fid.CLE	CLINICAL-ENCOUNTER-SECTION	医科受診情報
	ts.fid.CLS	CLINICAL-SUMMARY-SECTION	医科サマリー
	ts.fid.CSS	CLINICAL-SERVICE-SECTION	医科サービス情報



<input type="checkbox"/> DENTAL	<i>ts.fid</i> .RGD	REGISTERED-DIAGNOSIS-SECTION	歯科病名診断情報
	<i>ts.fid</i> .DNE	DENTAL-ENCOUNTER-SECTION	歯科受診情報
	<i>ts.fid</i> .DNS	DENTAL-SUMMARY-SECTION	歯科サマリー
<input type="checkbox"/> HEALTH	<i>ts.fid</i> .DSS	DENTAL-SERVICE-SECTION	歯科サービス情報
	<i>ts.fid</i> .HCE	HEALTHCHECK-ENCOUNTER-SECTION	健康診断受診情報
<input type="checkbox"/> WELFARE	<i>ts.fid</i> .HSC	HEALTH-SERVICE-SECTION	健康サービス情報
	<i>ts.fid</i> .CRA	CARE-ASSESSMENT-SECTION	介護認定情報
	<i>ts.fid</i> .HCA	HANDICAPED-ASSESSMENT-SECTION	障害認定情報
	<i>ts.fid</i> .CRP	CAREPLAN-SECTION	ケアプラン情報
<input type="checkbox"/> EXAMINATION	<i>ts.fid</i> .WSS	WELFARE-SERVICE-SECTION	福祉サービス情報
	<i>ts.fid</i> .OBR	HL7 OBR segment	検査オーダー情報
<input type="checkbox"/> PRESCRIPTION	<i>ts.fid</i> .OBX	HL7 OBX segment	検査、測定結果情報
	<i>ts.fid</i> .RXO	HL7 RXO segment	処方情報
	<i>ts.fid</i> .RXD	HL7 RXD segment	調剤情報
<input type="checkbox"/> IMAGE	<i>ts.fid</i> .RXG	HL7 RXG segment	投薬情報
	6章参照	image files	画像情報

補足: File Name

*ts*:日付[時間]は YYYYLLDD[HH[MM[SS]]][ ]は省略可能を意味する。)

*fid*:施設ID

# 遠隔医療事例集 英語版

次のサイトで参照できます。

<http://mi.med.u-tokai.ac.jp>

Case Number : 1

-----  
Main Facility : "Department of Radiology, Mie University School of  
Medicine"  
-----

Related Facilities : Mie Prefecutral Shima Hospital; Kamishima Clinic  
-----

Number of Facilities : 2  
-----

Practicality : Practical  
-----

Date of Start : 1996/7  
-----

Date of End :  
-----

Status : in progress  
-----

Outline : Non-compressed digital images can be transferred via  
communication satellites. At the same time, conversations can be  
made through the television conference system. The medical fee  
related problems can also be cleared.  
-----

Technology - Materials : Digital images, security system, and solar  
system  
-----

Technology - Communication Lines : Digital communication satellite  
-----

Characteristics : Digital communication satellite. Digital images.  
Security system. Can be operated by the solar system for 3 days if  
a disaster cuts off power supply. Inexpensive and economical.  
Costs less than mobile phone. Can be easily moved. Suitable for  
the base hospitals at a disaster or hospitals in isolated islands.  
-----

Evaluation : This system is inexpensive and can immediately provide  
the medical network for remote places and isolated islands.  
Because it can be connected to the Internet, information can be  
sent from any remote places. If the national budget permits, the  
system should be considered together with the iridium plan in  
order to establish huge network. The system can also be used to  
provide international medical help.  
-----

Keywords : Communication satellite, Remote image system  
-----

References :  
-----

Person in Charge : Kan TAKEDA  
-----

Department : "Department of Radiology, Mie University School of  
Medicine"  
-----

Tel : +81-59-231-5195  
-----

Fax : +81-59-231-5195  
-----

E-mail :  
-----

Date Updated : 1999/3/15  
-----

Case Number : 2

-----  
Main Facility : Gunma University School of Medicine  
-----

Related Facilities : Gunma University Faculty of Engineering  
-----

Number of Facilities : 1  
-----

Practicality : Experimental  
-----

Date of Start : 1997/4  
-----

Date of End :  
-----

Status : in progress  
-----

Outline : The experiment about wireless image transfer via stationary satellites has been conducted to examine which modalities provide the images that are useful for diagnosis after transferred.  
-----

Technology - Materials : Wireless communication has been made among earth stations consisting of satellite communication, CODEC, VSAT, and TV.  
-----

Technology - Communication Lines : The stationary satellite for satellite communication, JSAT-1, has been used.  
-----

Characteristics : Relatively inexpensive through narrow-band circuit. This is an experiment about image transfer through practical narrow-band circuit.  
-----

Evaluation : It has been confirmed that stationary images can be transferred, while quickly moving dynamic picture images cannot. Therefore, further devices are required to put the transfer system to practical use.  
-----

Keywords : Stationary satellite, image communication  
-----

References :  
-----

Person in Charge : Tomio Inoue  
-----

Department : "Department of Nuclear Medicine, Gunma University School of Medicine"  
-----

Tel : +81-27-220-8401  
-----

Fax : +81-27-220-8409  
-----

E-mail : tomioi@sb.gunma-u.ac.jp  
-----

Date Updated : 1999/2/21  
-----

Case Number : 3

-----  
Main Facility : "Department of Radiology, Shinshu University School of  
Medicine"  
-----

Related Facilities : Nagano Red Cross Hospital; Fujimi-Kogen  
Hospital; Matsumoto National Hospital; Komoro Kohsei General  
Hospital  
-----

Number of Facilities : 1  
-----

Practicality : Experimental  
-----

Date of Start : 1991/1  
-----

Date of End :  
-----

Status : in progress  
-----

Outline : High definition radiogram transmission (simple X-ray, CT, MR,  
CR)  
-----

Technology - Materials : PC  
-----

Technology - Communication Lines : Shinshu University campus network,  
1.5 MHz (1.5 Mbps)  
-----

Characteristics : Data transmission with microwave communication.  
Transmission of indeterminable cases and remote conference.  
-----

Evaluation : Films input using a film digitizer are mainly  
transmitted.  
-----

Keywords : Teleradiology, Teleconf.  
-----

References :  
-----

Person in Charge : Kazuhiro Oguchi  
-----

Department : "Department of Radiology, Shinshu University School of  
Medicine"  
-----

Tel : +81-263-37-2650  
-----

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-----

E-mail : koguchi@hsp.md.shinshu-u.ac.jp  
-----

Date Updated : 1999/2/24  
-----

Case Number : 4

-----  
Main Facility : "Department of Radiology, Shinshu University School of  
Medicine"  
-----

Related Facilities : Nagano Red Cross Hospital; Fujimi-Kogen  
Hospital; Matsumoto National Hospital; Komoro Kohsei General  
Hospital  
-----

Number of Facilities : 1  
-----

Practicality : Experimental  
-----

Date of Start : 1994/4  
-----

Date of End :  
-----

Status : in progress  
-----

Outline : Radiogram transmission  
-----

Technology - Materials : Macintosh  
-----

Technology - Communication Lines : INS Net 64 (TA-SJ1, NTT)  
-----

Characteristics : Consists of general equipment, except for TA and its  
software.  
-----

Evaluation : This is a 8-bit scanner for public welfare, and has  
limitations for the input of high density images.  
-----

Keywords : Teleradiology, Teleconf.  
-----

References :  
-----

Person in Charge : Kazuhiro Oguchi  
-----

Department : "Department of Radiology, Shinshu University School of  
Medicine"  
-----

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Fax : +81-263-37-3087  
-----

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-----

Date Updated : 1999/2/24  
-----

Case Number : 5

-----  
Main Facility : "Department of Radiology, Shinshu University School of  
Medicine"  
-----

Related Facilities : Nagano Red Cross Hospital; Fujimi-Kogen  
Hospital; Matsumoto National Hospital; Komoro Kohsei General  
Hospital  
-----

Number of Facilities : 2  
-----

Practicality : Experimental  
-----

Date of Start : 1996/2  
-----

Date of End :  
-----

Status : in progress  
-----

Outline : Radiogram transmission  
-----

Technology - Materials :  
-----

Technology - Communication Lines : INS Net 64 (TA-SJI, NTT)  
-----

Characteristics : Consists of general equipment except for TA and its  
software.  
-----

Evaluation : Film digitizer function is 12 bit.  
-----

Keywords : Teleradiology, Teleconf.  
-----

References :  
-----

Person in Charge : Kazuhiro Oguchi  
-----

Department : "Department of Radiology, Shinshu University School of  
Medicine"  
-----

Tel : +81-263-37-2650  
-----

Fax : +81-263-37-3087  
-----

E-mail : koguchi@hsp.md.shinshu-u.ac.jp  
-----

Date Updated : 1999/2/24  
-----

Case Number : 6

-----  
Main Facility : Matsue Red Cross Hospital  
-----

Related Facilities : Oki Hospital  
-----

Number of Facilities : 1  
-----

Practicality : Practical  
-----

Date of Start : 1993/3  
-----

Date of End :  
-----

Status : in progress  
-----

Outline : Oki Hospital in an isolated island of Oki does not have neurosurgeon nor facilities for neurosurgery. The hospital carries out head CT scanning of cerebrovascular diseases (subarachnoid hemorrhage, hypertensive encephalorrhagia, and cerebral infarction), head injuries, and cerebral tumors, and transmits the results to the Matsue Red Cross Hospital. Then, the neurosurgeons in the hospital examine them to make diagnosis, and advice the physicians in the Oki Hospital the therapeutic policy including surgical indication, especially the needs of emergency transportation (by the helicopters of the Self-Defense Forces or Disaster Prevention, or by ferry).

-----  
Technology - Materials : Photo-phone  
-----

Technology - Communication Lines : Public telephone  
-----

Characteristics : Medical image transmission system using public telephone.  
-----

Evaluation : Two to three image of subarachnoid hemorrhage, head injuries, or cerebral hemorrhage have been transmitted every month. Although many of the cases had to be transported urgently, they also included the patients who should be monitored without specific treatments or who are not indicated for surgery and therefore need not to be transported. In addition, the Oki Hospital also consulted us in terms of the need to refer non-urgent patients to our hospital. Therefore, the system is useful also for patients.  
-----

Keywords :  
-----

References :  
-----

Person in Charge : Yamamoto Mitsuo  
-----

Department : Department of neurosurgery Matsue Red Cross Hospital  
-----

Tel : +81-852-24-2111  
-----

Fax : +81-852-21-6469  
-----

E-mail :  
-----

Date Updated : 1999/2/19  
-----



Case Number : 7

-----  
Main Facility : Itabashi Senior Citizen's Health & Welfare Center  
-----

Related Facilities :

-----  
Number of Facilities : 1  
-----

Practicality : Experimental  
-----

Date of Start : 1994/4  
-----

Date of End : 1996/3  
-----

Status : finished  
-----

Outline : The Elderly Health and Welfare Center in Itabashi ward has been actively working to provide the total care consisting of health, welfare, and medical care so that the elderly who needs specific care could live at home with his/her family and neighbors in a local community. To establish at-home care system, a joint study with Tokyo Medical and Dental University has been conducted for the total at-home care using dynamic picture color television sets. For this purpose, a TV-phone was installed in the 2 families of the elderly who requires care at home for 3 months. This was carried out for a total of 14 families.  
-----

Technology - Materials : Fujitsu IS-100 (6 cases), VS-700 (8 cases)  
-----

Technology - Communication Lines :

-----  
Characteristics : Experts including physicians, public health nurses, case workers, physical therapists, work therapists, and care welfare specialists make a team and do care management as helpers of at-home care. The best use of the TV phone was attempted, and it was found effective for helping the elderly.  
-----

Evaluation : The TV phone was effective in terms of the (1) instruction of nursing and help, (2) support to and coordination of helpers, (3) instruction of rehabilitation, (4) instruction of communication, and (5) exchange with others and improvement of sociality.  
-----

Keywords : At-home care system, dynamic picture color TV set  
-----

References :

-----  
Person in Charge : Matsumoto Miisuko  
-----

Department : Itabashi Senior Citizen's Health & WELFAre Center  
-----

Tel : +81-3-5970-1111  
-----

Fax : +81-3-5392-2060  
-----

E-mail :

-----  
Date Updated : 1999/2/24  
-----

Case Number : 8

---

Main Facility : Nishikawa Town Hospital

---

Related Facilities : "dwelling patients, Tokai University School of Medicine"

---

Number of Facilities : 50+3

---

Practicality : Practical

---

Date of Start : 1996/4

---

Date of End :

---

Status : in progress

---

Outline : Bi-directional communication using video-telephones is established among a municipal hospital, a home care support center and bedridden patients at home. The communication is made between the home care support center and patient's home at fixed time every day to monitor at-home conditions. The current health insurance system limits the number of visits to patients' home. Moreover, the hospital also has the limitations of human resource. This system is performed to clear these problems. It was evaluated whether the TV communication assisted visiting nursing and medical care.

---

Technology - Materials : Video-telephone (TV monitor, CCD camera, video printer and operation desk)

---

Technology - Communication Lines : Analog telephone circuits (POTS)

---

Characteristics : Seven levels of picture quality (5 levels of dynamic picture and 2 levels of static picture), most high definition is NTSC (640\*480).

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Evaluation : The TV communication is made at a fixed time every day. Extraordinary communication is made as required. This system is useful for physicians because they could monitor the meals and behaviors of the patients every day; some commented that the image quality is sufficiently high. For patients' families, the system is good because it allows them to see the physicians every day, which make them out of anxiety.

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Keywords : Video-telephone.

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References : "(1)Ogushi Y et al:Support of home medicine and welfare using video-telephones, Proceedings of the 18th conference in medical informatics in Japan, 248-249, 1998. (2)Yamanouchi N et al:Supporting system for medicine and welfare in patients's home, Medicine and Computer, 9, 11-15, 1998. (3)Ogushi et al:Multi-media medical lectures CD-ROM' 98, Tokai University Press, Tokyo, 1998. (4)Horikawa M et al:Research of supporting system for home resident patients using bi-directional televisions, Proceedings of the 16th conference in medical informatics in Japan, 354-355, 1996."

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Date Updated : 1999/3/15

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Case Number : 9

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Main Facility : Aomori Prefectural Central Hospital Department o  
Neurusurgery  
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Related Facilities : "Murakami Shinmashi Hospital, Kondo Hospital,  
Hiranai-machi National Health Insurance, Hitranai Central Hospiutal,  
Hakuseikai Hospital for Gastrointestinal dosease, Namioka Municipal  
Hospital Kouaikai Hospital, Ajigasawa Public Central Hospital,  
Public Kanagi Hospital, Turuta Town Hospital Seihoku Chuoh Hospital,  
Kanita Town Hospital"  
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Number of Facilities : 11  
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Practicality : Practical  
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Date of Start : 1989  
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Date of End :  
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Status : in progress  
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Outline : As we have heavy snowsin Aomori, it takes long time to  
transport patients by amburance. We found some patients who were  
not severe to move them to the the hospital. It was required to  
reduce unnecessary moving. The receiver was settled in a nurse  
station from where they can respond any time and call doctors.  
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Technology - Materials : PhotoPhone WS (Image Data, USA)  
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Technology - Communication Lines : POTS  
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Characteristics : Medical images are taken from films (CT, plain X-ray,  
CAG etc.) using TV-camera. The data are transfereed via POTS  
lines.  
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Evaluation : 11 hospitals are using the network and the other three  
hospitals use the same system. The usage is 180 times per year. A  
half of the patients were moved. We can easily and rapidly  
recognize the status of the patients using the system. We can give  
the medical advice about the patient who is not moved nor severe.  
We estimate the system is acceptable for the community.  
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Keywords :  
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References : "Tanaka T, The Present Condition of the Tele-medicine in  
Aomori Prefectural Central Hospital, RESPIRATION AND CIRCURATION  
43: 21-27."  
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Date Updated : 1999/3/5  
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