

## **Supporting Document 9.2**

### **Evaluation of DRCS in Relation with DRMASS and Standard VSAT**

Master plan recommends new DRCS with wide band IP network solution for PCO network in rural area. Internet and mail services are now widely deployed through the world, in which require higher speeds of transmission.

Worldwide tendency will certainly be to rush at developing higher speed of transmission like a Gb/s and Tb/s basis. The higher the speed in transmission, the better would be but, the investment would be limited. It is, therefore, recommended constructing a practical and feasible network and the infrastructure to telecommunication network meet the local and social needs.

The new telecommunication network to be constructed must comply with the requirement of IP system, which will be applied for all telecommunication networks in future. The technical difference and the rough idea of cost comparison between the proposed wide band radio system and present system of DRMASS and Standard VSAT are shown below and the proposed system is recommended to be applied for the rural area.

ETC's intension is to expand transmission lines with wide band and high-speed solutions for multimedia applications for socio-economic infrastructure of rural areas, such as remote education, remote medicine, remote medical service etc.

As shown in the table of next page,

- 1) wide band solution is given only by the DRCS proposed,
- 2) the DRCS complies with the future IP network requirement and
- 3) installation cost and annual operation and maintenance cost will be cheaper than that of VSAT

The terrestrial transmission system will be better solution taking a long-range view.

VSAT system shall be applied to the isolated remote areas as a temporal solution.

Reference is given to the table of rough idea for cost comparison.

(1) Technology Comparison

Item	Proposed DRCS (Wide Band IP)	DRMASS	Standard VSAT
Network	Wide Band IP Data Speed: 64 kb/s ~ 256 kb/s	Telephone Data Speed: 64 kb/s	Telephone Data Speed: 56 kb/s
Telephone	VoIP (Voice over IP) Variable Voice Coding: 5,6k / 8k / 64 kb/s	Fixed Voice Coding: PCM 64 kb/s	Fixed Voice Coding
Internet (e-mail, web etc.)	Wide Band IP Variable Data Speed: up to 256 kb/s	Narrow Band IP (Dial-up Modem)	Narrow Band IP (Dial-up Modem)
Comments	Voice CODEC can be selected according to the services of line. (Four (4) times as many as channels can be obtained at 8 kb/s CODEC in stead of 64 kb/s.) Valuable speeds of lines such as high speed data, Internet, telephones etc. are automatically assigned. High speed internet is available due to being composed of IP network.	Line capacity is fixed by PCM CODEC of 64 kb/s/. Internet speed is low due to the design basis of being for telephone line.	Line capacity is fixed by 56 kb/s/. Internet speed is low due to the design basis of being for telephone line. The system is suitable to be used in the isolated remote area due to easy installation.

(2) Rough Idea of Cost Comparison

Item	Standard VSAT, 56 kb/s	DRCS, 256 kb/s
Hard Ware	US\$ 8,000 – 15,000 per Remote Site	US\$ 28,270 / 256 kb/s <b>US\$ 7,207 / 64 kb/s</b>
Management Expenses	US\$ 140, 000 / year	0