**DECREE OF THE MINISTER OF COMMUNICATION AND INFORMATION TECHNOLOGT OF THE REPUBLIC OF INDONESIA**

**NUMBER : 06/PER/M.KOMINFO/02/2012**

**ON**

**TECHNICAL REQUIREMENTS OF *INTERNET PROTOCOL MULTIPLEXER* EQUIPMENT**

**BY THE GRACE OF GOD THE ALMIGHTY**

**MINISTER OF COMMUNICATION AND INFORMATION TECHNOLOGY OF THE REPUBLIC OF INDONESIA**

Considering: a. that in accordance with the provision of Article 71 paragraph (1) of the Government Regulation of the Republic of Indonesia Number 52 Year 2000 on Telecommunication Provision which reads that every telecommunication tool and equipment manufactured, assembled, imported for trade and or use in the territory of the Republic of Indonesia shall fulfil the technical requirements;

 b. that based on consideration referred to in point a above, it is considered necessary to ratify a Decree of the Minister of Communication and Information Technology on Technical Requirements of *Internet Protocol Multiplexer* Equipment.

Bearing in mind:1. Law of the Republic of Indonesia Number 36 Year 1999 on Telecommunication (State Gazette of the Republic of Indonesia Number 154 Year 1999, Additional State Gazette of the Republic of Indonesia

 Number 3881);

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1. Government Regulation of the Republic of Indonesia Number 52 Year 2000 on Telecommunication Provision (State Gazette of the Republic of Indonesia Number 107 Year 2000, Additional State Gazette of the Republic of Indonesia Number 3980);
2. Decree of the President of the Republic of Indonesia Number 47 Year 2009 on Formation of the Organization of State Ministries of the Republic of Indonesia as amended several times, the latest by the Decree of the President of the Republic of Indonesia Number 91 Year 2011 on Third Amendment to the Decree of the President of the Republic of Indonesia Number 47 Year 2009 on Formation of the Organization of State Ministries of the Republic of Indonesia;
3. Decree of the President of the Republic of Indonesia Number 24 Year 2010 on Positions, Duties, and Functions of State Ministries of the Republic of Indonesia and Organizational Structure, Duties, and Functions of Echelon I of State Ministries of the Republic of Indonesia as amended several times, the latest by the Decree of the President of the Republic of Indonesia Number 92 Year 2011 on Second Amendment to the Decree of the President of the Republic of Indonesia Number 24 Year 2010 on Positions, Duties, and Functions of State Ministries of the Republic of Indonesia and Organizational Structure, Duties, and Functions of Echelon I of State Ministries of the Republic of Indonesia;

1. Decision of the Minister of Communication Number KM. 3 Year 2001 on Technical Requirements of Telecommunication Tools and Equipment;

1. Decree of the Minister of Communication and Information Technology Number 03/PM.Kominfo/5/2005 on Adjustment of Nomenclatures of a number of Decisions/Decrees of the Minister of Communication which regulate Special Material Contents in the field of Post and Telecommunication;
2. Decree of the Minister of Communication and Information Technology Number 29/PER/M.KOMINFO/09/2008 on Certification of Telecommunication Tools and Equipment;

1. Decree of the Minister of Communication and Information Technology Number 17/PER/M.KOMINFO/10/2010 on Organization and Work Method of the Department of Communication and Information Technology;
2. Decree of the Minister of Communication and Information Technology Number 15/PER/M.KOMINFO/06/2011 on Adjustment of Nomenclatures of a number of Decisions/Decrees of the Minister of Communication and Information Technology which regulate Special Material Contents in the Field of Post and Telecommunication and Decisions/Decrees of the Director General of Post and Telecommunication.

**DECIDES**

**To ratify** : **DECREE OF THE MINISTER OF COMMUNICATION AND INFORMATION TECHNOLOGY OF THE REPUBLIC OF INDONESIA ON TECHNICAL REQUIREMENTS OF *INTERNET PROTOCOL MULTIPLEXER*  EQUIPMENT**

Article 1

*Internet Protocol Multiplexer* equipment hereinafter abbreviated as *IP Multiplexer* shall fulfil the technical requirements referred to in the Attachment which is an integral part of this Ministerial Decree.

Article 2

The testing implementation of *IP Multiplexer* equipment shall be guided by the technical requirements referred to in the Attachment which is an integral part of this Decree.

Article 3

This Ministerial Decree shall come into force on the date of its ratification.

In order to make known to every body, instruct the promulgation of this Ministerial Decree by placing it in the State Announcement of the Republic of Indonesia.

 Done at: JAKARTA

 On : February 7, 2012

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**MINISTER OF COMMUNICATION AND INFORMATION TECHNOLOGY OF THE REPUBLIC OF INDONESIA,**

Signed

**TIFATUL SEMBIRING**

Promulgated at Jakarta

On February 20, 2012

**MINISTER OF LAW AND HUMAN RIGHTS OF THE**

 **REPUBLIC OF INDONESIA**

 Signed

 **AMIR SYAMSUDDIN**

STATE ANNOUNCEMENT OF THE REPUBLIC OF INDONESIA YEAR 2012 NUMBER 218

For copy conform to the original

**HEAD OF BUREAU OF LEGAL AFFAIRS**

Signed

 **D. SUSILO HARTONO**

ATTACHMENT: DECREE OF THE MINISTER OF COMMUNICATION

 AND INFORMATION TECHNOLOGY

 NUMBER : 06//PER/M.KOMINFO/02/2012 ON TECHNICAL

 REQUIREMENTS OF *INTERNET PROTOCOL*

 *MULTIPLEXER* EQUIPMENT

 DATE : February 7, 2012

**TECHNICAL REQUIREMENTS OF *INTERNET PROTOCOL MULTIPLEXER* EQUIPMENT**

The scope of technical requirements of *IP Multiplexer* equipment covers :

CHAPTER I : General Provisions (Definition, configuration, abbreviations,, and

 terms);

CHAPTER II : Technical Requirements (raw material and construction, operation

 requirement, electrical safety and health and EMC requirements,

 interface requirement, functional requirement, and management

 method requirement);

CHAP[TER III : Completeness of Equipment;

CHAPTER IV : Testing (testing implementation, method of sampling, and test

 method).

**CHAPTER I**

**GENERAL PROVISIONS**

**1. Definition**

*IP Multiplexer* equipment is equipment that has the function of combining a number of signals to become one IP based signal to be transmitted through transmission media.

**2. Configuration**

 **ASI IP**

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 IN  **IP MULTIPLEXER** **OUT**

 **IP**

**Figure 1. Configuration of IP MULTIPLEXER System**

**3. Abbreviations**

IP : *Internet Protocol*

AES : *Audio Engineering Society*

ASI : *Asynchronous Serial Interface*

BER : *Bit Error Rate*

BISS : *Basic Interoperable Scrambling System*

BNC *Bayonet Neill-Concelman connector*

bps : *bit per second*

C : Celsius

CSA : *Common Scrambling Algorithm*

DVB : *Digital Video Broadcasting*

dB : *DeciBel*

ED : *Enhanced Standard Definition*

EIA : *Electronic Industries Association*

ac : *alternating current*

HD : *High Definition*

HTTP : *Hypertext Transfer Protocol*

Hz : *Hertz*

IEC : *International Electrotechnical Commission*

IEEE : *Institute of Electrical and Electronics Engineers*

M : *Mega*

MPEG : *Motion Picture Expert Group*

NTSC : *National Television System Committee*

PAL : *Phase Alternating Line*

RJ : *Register Jack*

RS : *Recommended Standard*

S : *Satellite*

s : *Secure*

SD : *Standard Definition*

SDI : *Serial Digital Interface*

SNMP : *Simple Network Management Protocol*

SMPTE : *Society of Motion Picture and Television Engineers*

T : *Terrestrial*

TIA : *Telecommunication Industry Association*

UHF : *Ultra High Frequency*

V : *Volt*

VHF : *Very High Frequency*

**4. Terms**

*Audio* : hearing or receiving sound.

*;Decoder* : device used to return an information that has been traced. With this device the above information may be composed as true information.

*De*-Encryption : the process for obtaining back a message (information) that has been traced, so that such information can be seen using key opener.

*Encryption*  : the process of changing a message (information) in such a way so that it cannot be seen without using key opener.

*Internet Protocol :* data packet and the scheme of addressing which enable

(IP) users to direct data packet according to the address which they own in a network system although between the address of the sender and that of the addressee/destination there is no direct *link.*

*Video :* Moving picture displayed electronically.

**CHAPTER ii**

**TECHNICAL REQUIREMENTS**

**1. Raw Material and Construction Requirement**

Raw material and construction of equipment requirement must comply with the following provisions:

a. The equipment is made of strong and solid material commensurate with the tropical climate;

b. The components of the equipment are made of high quality material, anti-corrosion, and anti condensation;

c. Parts of the equipment which are modular in nature must be arranged well and neatly;

d. Must be equipped with measurement and maintenance terminals;

e. Interface connector of *input* and *output* equipment: RJ-45;

f. The connection system at the connecting terminal is easily implemented and has the nature of good electricity;

g. Must be equipped with good cooling system.

**2. Operation Requirement**

a. Power Supply

The equipment must function well in alternating current condition : 220 Vac ± 10%, 50 Hz ± 6%..

b. Environmental Condition

1) The equipment must operate normally at room temperature : 0o. - 40o C.

Testing is done at extreme condition namely at the temperature of 40o C during 24 hours continuously;

2) The equipment must operate normally at humidity: 5% - 95% anti condensation;

3) Total *noise* of the voice issued by the equipment : maximum 65 dB;

Measurement is performed at a distance of one (1) meter from the tested equipment with the height of measuring instrument of one point five (1.5) meters from the base of the tested equipment.

c. Protection System

The equipment must have a protection system, among other things :

1) Protector of excess current;

2) Protector of excess voltage

d. Alarm Indicator

Possess alarm facility which can detect the occurrence of:

1) Disturbance at power supply unit;

2) Indicator for activities and disturbance of every interface.

**3. Electrical safety, Health, and EMC Requirements**

The equipment must fulfil :

a) the requirement of electrical safety and health in accordance with the International Standard of IEC 60950-1 or equivalent standard;

b) the requirement of *Electromagnetic Compatibility* in line with CISPR 22.

**4. Interface Requirement**

A. *IP Multiplexer* equipment must have at least one (1) type of the following *input* interface :

1. IP, with characteristics of:

a) Type of Ethernet : 10/100 Base-T;

b) Format: UDP;

c) IP Address : Multicast, Unicast;

d) Bit Rate : may be adjusted with ASI output rate.

2. ASI :

TS Rate : 1 up to 64 Mbps;

TC packet length : 188 byte, 204 RS ON, 204 RS OFF.

B. *IP Multiplexer* equipment must have at least one (1) type of the following *output*  interface :

1. IP with characteristics of :

a) Type of Ethernet : 10/100 Base-T;

b) Format : UDP;

c) IP Address : Multicast, Unicast;

d) Bit Rate : may be adjusted with ASI output rate.

**5. Function Requirement**

*IP Multiplexer* equipment must be able to :

a. Combine a number of signals and change them into one signal with IP format;

b. Compress signals and deliver them.

**6. Management Method Requirement**

*IP Multiplexer* equipment must be able to :

 a. Be configurative, at least one type of available *management* interface with the method of:

1) *Serial console* for the type of *management* interface RS-232 and or:

2) *WebGUI*  (HTTP / HTTPs) for the type of *Ethernet management* interface;

b. Be monitored through *Ethernet* interface using SNMP protocol or protocol of the same sort.

**CHAPTER III**

**COMPLETENESS OF EQUIPMENT**

*IP Multiplexer* tools and equipment to be tested must be equipped with:

**1. Equipment Identity**

containing brand, *type* / model, manufacturing country, and serial number;

**2. Guide for the Operation of the Equipment**

In Bahasa Indonesia (Indonesian Language) and or English.

**CHAPTER IV**

**TESTING**

**1. Testing Implementation**

Testing of *IP Multiplexer* equipment is done by a Test Office that has owned accreditation from authorized institution and designated by Directorate General of Resources and Equipment of Post and Information Technology.

**2. Method of Sampling**

Sampling of test material is done at random according to the test procedure based on prevailing regulation.

**3. Test Method**

The test method used is in accordance with *Standard Operating Procedure* of the respective Test Offices.

**MINISTER OF COMMUNICATION AND INFORMATION TECHNOLOGY**

Signed

**TIFATUL SEMBIRING**