Coding of X.731 and M.3100 State and Status Information

This supporting document specifies how X.731 and M.3100 state and status information MUST be mapped to the Interface information model if supported by an OS. For definition of the states and statuses and their values refer to ITU-T recommendations X.731, X.721, and M.3100 respectively, including the specification of which information is read-only and which is read-write.

Any particular state of a managed object is modeled as a name/value pair with *prescribed* name and values and, usually, an *ITU-T defined* state transition diagram showing the admissible value changes. State parameters may be further qualified by status parameters. A status condition expressed by a status parameter value may force specific values of state parameters. Unlike states, statuses need or can not have a state transition diagram since their changes are often triggered. States and statuses may be single-valued or set-valued. The values of multiple-valued parameters are represented by comma separated lists of single values.

The semantics of every state and status listed below is a matter of bilateral agreement with one exception: if *Oper state*, *Admin state*, and *Service state* (in the case of MTNM) or *Resource Fulfilment state* (in the case of MTOSI) (defined for equipment objects and as a TP transmission parameter) are used simultaneously, their values have to meet the following:

Table 4-4 ITU-T State Mapping

ITU-T Operational State	ITU-T Administrative State	MTNM Service State or MTOSI Resource Fulfillment State
enabled	unlocked	IN_SERVICE
	locked	OUT_OF_SERVICE_BY_MAINTENANCE
	shutting down	SERV_NA
disabled	unlocked	OUT_OF_SERVICE
	locked	OUT_OF_SERVICE_BY_MAINTENANCE

Note that the support of all or some of these parameters by an OS is **entirely optional** and that none of these parameters has any semantic impact on the Interface except the stated dependency on *Service*/*Resource Fulfillment state*. It is only required to use the names and values specified if the OS supports any of them in order to achieve **multi-vendor interoperability**.

ITU-T State or Status	Name String	Value String
Oper[ational] state	"X.721::OperationalState"	One of the following: • "DISABLED" • "ENABLED"
Admin[istrative] state	"X.721::AdministrativeState"	One of the following: • "LOCKED" • "UNLOCKED" • "SHUTTING_DOWN"
Usage state	"X.721::UsageState"	One of the following: • "IDLE" • "ACTIVE" • "BUSY"

ITU-T State or Status	Name String	Value String
Avail[ability] status	"X.721::AvailabilityStatus"	One or more of the following separated by ",": • "" • "IN_TEST" • "FAILED" • "POWER_OFF" • "OFF_LINE" • "OFF_DUTY" • "DEPENDENCY" • "DEGRADED" • "NOT_INSTALLED" • "LOG_FULL"
Control status	"X.721::ControlStatus"	One or more of the following separated by ",": • "" • "SUBJECT_TO_TEST" • "PART_OF_SERVICES_LOCKED" • "RESERVED_FOR_TEST" • "SUSPENDED"
Holder status	"M.3100::HolderStatus"	One of the following: • "HOLDER_EMPTY" • "IN_THE_ACCEPTABLE_LIST" • "NOT_IN_THE_ACCEPTABLE_LIST" • "UNKNOWN_TYPE"
	"M.3100::CircuitPackType"	a free-format string
Alarm status	"M.3100::AlarmStatus"	One of the following: • "CLEARED" • "PENDING" • "WARNING" • "INDETERMINATE" • "MINOR" • "MAJOR" • "CRITICAL"
ARC state	"M.3100::ArcState"	One of the following: • "ALM" • "NALM" • "NALM_QUALIFIED_INHIBIT" • "NALM_TIMED_INHIBIT"
	"M.3100::NALMQIInterval"	"NO_ADJUSTMENT", "0" .. "5940"
	"M.3100::NALMTIInterval"	"NO_ADJUSTMENT", "0" .. "5940"
ARC QI status	"M.3100::ArcQIStatus"	One of the following: • "NOT_APPLICABLE" • "NALM_NOT_REPORTED" • "NALM_COUNT_DOWN"
Unknown status	"X.721::UnknownStatus"	One of the following: • "False" • "True"

ITU-T State or Status	Name String	Value String
State	"X.721::State"	One or more of the following separated by ",": • "" • "X.721::OperationalState" • "X.721::AdministrativeState" • "X.721::UsageState" • "X.721::AvailabilityStatus" • "X.721::ControlStatus" • "M.3100::HolderStatus" • "M.3100::AlarmStatus" • "M.3100::ArcState" • "M.3100::ArcQIStatus" • "X.721::UnknownStatus" • <any vendor-specific state or status>

Revision History

Version	Date	Description of Change
3.0	April 2005	
3.0	June 2005	Reference updated
3.1	November 2005	Version in names of referenced supporting documents deleted.
3.2	November 2007	Added reference to Resource Fulfilment state. Minor editorial changes.

Acknowledgements

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How to comment on the document

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Please be specific, since your comments will be dealt with by the team evaluating numerous inputs and trying to produce a single text. Thus we appreciate significant specific input. We are looking for more input than wordsmith" items, however editing and structural help are greatly appreciated where better clarity is the result.