ITU Guidelines for ITU-T action on reported misuse of E.164 number resources and International Calling Party Number Delivery

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Editor, E.156 and E.157

SG11 Brainstorming session on
SS7 vulnerabilities
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Outline of presentation

- What are E.156 (misuse) and E.157 (CPND)
- E.156 at present
- Current work to revise E.156
- E.157 at present
- Current work to revise E.157

E.156

Guidelines for ITU-T action on reported misuse of E.164 number resources

Outlines the procedures that the TSB Director should undertake when he has received reports of alleged misuse from members, including methods to address and counter any alleged misuse when such reports are brought to his attention

Misuse of E.156 numbers

occurs where the use of that numbering resource does not conform to the relevant ITU-T Recommendation(s) assignment criteria for which it was assigned or when an unassigned numbering resource is used in the provision of a telecommunication service

Different types of E.164 codes

- Country Code for Geographic Areas
- Codes for Inmarsat and Groups Of Countries (e.g., +388)
- Country Code for Networks (e.g., +882), Country Codes for Global Services (e.g., +800, +878, etc.), Country Codes for GMSS Operators (e.g., +881)
- Country Codes for trials (e.g., +991)
- Unassigned Country Codes

E.164 misuse reporting and action

- If international, report to Director of TSB

- Report published on ITU web site (TIES protected)

- Action depends on type of code

- For geographic codes, notify concerned country

E.164 misuse results

- Effective for global codes (directly assigned)

- Not effective for geographic codes (indirectly assigned)

- Much misuse not reported, that is, few reports are sent to ITU

E.164 misuse current work

work in progress, not yet agreed

- Distinguish direct from indirect
- Direct: report to TSB
- Indirect:
  - OA reports to TSB for information, circulated on mailing list
  - OA reports to other OA for action
  - OA asks its regulator to contact other regulator
  - Can recommend that payment be withheld/stopped

E.157

International calling party number delivery

provides guidance for international calling party number delivery which is technology neutral. It also clarifies the relationship between calling party number delivery and number identification supplementary services

2009 CPND considerations

- Trend to suppress transmission across international boundaries of calling party numbers

- Such practices have an unfavourable effect on security and economic issues

- CPND is the basis for identifying the originating parties of calls

- Calling party can restrict CPND

2009 recommendation

- Geographic CPN sent across international boundaries shall contain as a minimum:

  - country code of the originating country

  - NDC or billing information

  - consistent with technical capabilities and national legal and regulatory frameworks

CPND current work

work in progress, not yet agreed

- E.164 numbers shall not be used if calling party does not have an assigned number (e.g. VoIP)

- CPN shall identify country, and service or service provider (national matter)

- If CPN is incorrect, replace with escape code (national matter)

- If CPN is incomplete, must have at least:
  - CC + NDC
  - FFS: Replacement number (e.g. 883 + CC + operator ID)

CPND current work
work in progress, not yet agreed

Additional document on spoofing

- Description

- Possible solutions
  - Authentication (e.g. SHAKEN and STIR)
  - Static call blocking
  - Dynamic call blocking (similar to spam filters)
  - Blocking the infrastructures used by bad actors to make unwanted calls

Related work

- ITU-T SG11 work on CLI and CLIP/CLIR
- 3GPP specifications
- National studies and actions regarding spoofing and CLI