

Robocall signaling

draft-sipcore-callinfo-spam

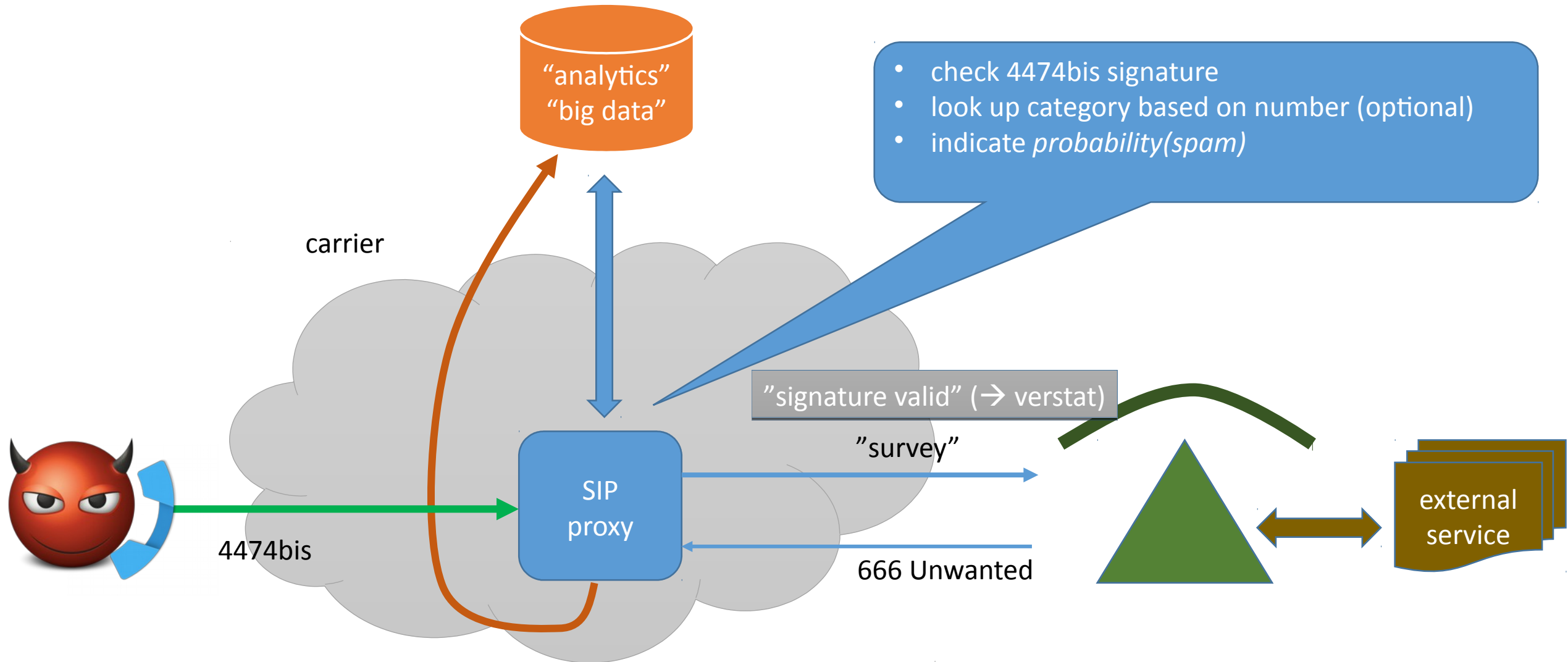
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Background (for the un-STIRed and un-SHAKEN)

- Unwanted calls are typically
 - some are illegal, some are just unwanted (by many)
 - example: *“this is the Internal Revenue Service; pay \$2,000 or you will be arrested”*; followed by *“this is your local police department; did you pay?”*
 - typical scams and illegal telemarketing: tech support, “you won a trip” (for a small fee), competitive utility sign-up,
 - annoying to many, but possibly legal: charity, political, survey
- Some robocalls are actually wanted (and helpful)
 - “your prescription is ready”, “doctor’s visit tomorrow”, “snow day”, “boil your water”
 - but may be confused with unwanted calls
- Enabled by
 - cheap VoIP – particularly international calls
 - hard-to-track
 - programmable SIP end systems
 - including calling party (caller ID) spoofing
 - anonymous money transfer

Architecture

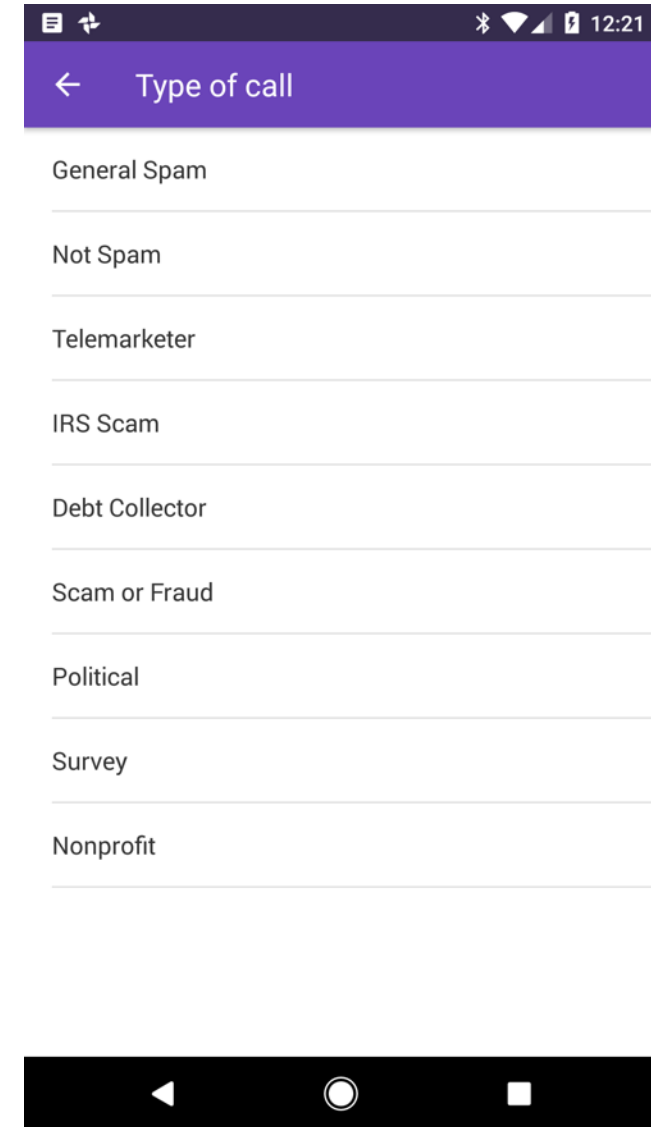


Motivation & assumptions

- Some carriers will do their own filtering, but ...
- Some carriers may need/want to leave that to third-party tools
 - avoid risk of rejecting wanted calls
 - particularly “grey” calls that some may want to receive or are not outright illegal
 - surveys, political calls, charities
- May also want on-device handling:
 - forward classes of calls to voice mail
 - display information and leave decision to human
 - change ringing behavior (e.g., with “Do not disturb” feature)
 - consult local app for decision
 - consult address book
 - make time-of-day dependent: no surveys or charity while I’m sleeping (in Korea)

Potential objections

- Categories are arbitrary!
 - commonly used in law & regulation (there are carve-outs for surveys, charities, political calls in the TCPA [US robocall law])
 - commonly used by current third-party robocall apps (Hiya, etc.)
 - reflects earlier calling party category
- Categories are guesses!
 - likely based on user feedback (and presumably some threshold: “90% of reports label this as a scam call, so we’ll slap on that label”)
 - in the future, may also be asserted based on direct carrier knowledge (“I know that my customer, the FCC, is a government agency”)



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- Conveys information from carrier (SBC, CSCF) to UA
- Parameters:
 - **spam**: estimated likelihood of spam (0-100%), i.e., measure of uncertainty
 - could be related to what fraction of called parties label this number as spam
 - **type**: type of caller
 - for VoIP home gateways, could be displayed via caller ID (CNAM)
 - **reason**: source of data
 - mostly, for debugging; similar to some email headers
 - **source**: domain of entity inserting data
- Example:
Call-Info: <http://www.example.com/5974c8d942f120351143>
;source=carrier.example.com ;**purpose=info** ;spam=85 ;type=fraud ;reason="FTC
list"

Call categories

Category	Description
business	placed by businesses, i.e., an entity or enterprise entered into for profit. This type is used if no other, more precise, category fits.
debt-collection	collecting of debt owed or alleged to be owed by the called party
emergency-alert	provide the recipient warnings and alerts regarding a pending or on-going emergency. (unrelated to emergency calls to 9-1-1 or 1-1-2. Includes alerts related to weather-related school closings.)
fraud	considered to be fraudulent.
government	government entity, if no more specific label such as "health" or "debt-collection" is known or applies.
health	informational calls by health plans, ... health care provider, ...
informational	information about a transaction: package delivery, appointment reminder, order confirmation
not-for-profit	not-for-profit organization, including for soliciting donations or providing information

Call categories

Category	Description
personal	A non-business, person-to-person, call, e.g., from a residential line or personal mobile number
political	elections or other political purposes
prison	Calls from jails, prisons and other correctional facilities
public-service	Calls that provide the recipient information regarding public services, e.g., school closings
spam	likely unwanted, if not otherwise classified
spoofed	calling number for this call has been spoofed
survey	solicits the opinions or data of the called party
telemarketing	placed in order to induce the purchase of a product or service to the called party
trusted	The call is being placed by a trusted entity and falls outside the other categories listed. This may include call backs, e.g., from a conferencing service, or messages from telecommunication carriers and utilities.

SIP Global Feature-Capability Indicator

- Must avoid insertion by malicious entities
- Thus, UA ignores unless “sip.call-info.spam” is a feature tag in REGISTER response
- If supported, proxy must strip
- Could be part of PASSPorT claim in the future
 - if end systems validate RFC4474bis
- Q: Right label & registry?