



STEPS FOR ROBOCALL MITIGATION – TIM BRASIL

TIM Brasil is a Brazilian Telecommunications Company that adopts best practices to provide high quality and performance services to its customers and partners. Therefore, it applies strict procedures to its network operations to avoid spoofing and robocalling. The main actions that are being implemented by TIM Brasil to ensure this type of control are described below:

- 1) Ensure their Enterprise Customers use an allowed range of calling number defined by TIM Brasil;
- 2) Together with Brazilian Regulation Agency (Anatel) has defined specific numbering range for call center calls;
- 3) Controls their mobile customers legitimacy through an authentication register in the HLR/AuC;
- 4) TIM has adopted restrictions on call attempts per second (CAPS control) in all international Wholesale agreements to reduce robocalling;
- 5) TIM Brasil NMC (Network Management Center) has a dedicated team to act immediately when robocalling or spoofing evidence or attempts are detected;
- 6) TIM Brasil joined antifraud and regulation groups (called GEAF and GTREG) composed by Brazilian operators and the Regulation Agency, that have started to study the best practices to avoid spoofing and robocalling since last year. TIM is looking for the best solution and has been considering STIR/SHAKEN and SEISMIC. TIM intends to complete trials next year;
- 7) The contracts entered into by TIM and its subscribers prohibit them from making calls using falsified data, massive profile, very short duration or any other type of artificial traffic;
- 8) Furthermore, the same contracts have a clause that prohibits customers from making larger scale calls, even preventing the use of equipment such as Black Box, GSM Box and similar equipment;
- 9) TIM is part of the SIGA system, which is a computerized system that identifies the use of illegal cell phones on the network, allowing only new mobile phones in good condition to be used on Brazilian SMP networks. This system allows the identification of black box cases, as it detects the lack of valid TAC;
- 10) TIM is using some tools to avoid a larger volume of calls through the mobile network. Some of these tools try to identify cases of possible static use (no mobility) of the service and cases where the volume of incoming calls is much lower when compared to the volume of outgoing calls;
- 11) TIM is part of the GTNOC group, which posts failure reports generated by carriers to deal with spoofing cases;
- 12) TIM is including a clause that mitigates and prohibits robocalling in all of its international voice contracts.