FGT TBD DoS Attack on IAB Deployment

Description: Adversary launches jamming attack on IAB or mIAB (gNB) node to cause DoS attack.

If one or more Integrated Access and Backhaul (IAB) nodes or gNBs wireless backhaul connection is jammed in tactical or mobile network deployment, the network connectivity will be disrupted. This will cause temporary DoS attack for some users until an alternate connectivity is available.

Mobile IAB nodes are small cell base stations which are typically deployed on a vehicle placed in strategic areas. For example, mIAB node can be deployed near a stadium for a game event. The backhaul traffic from the mIAB node is carried over the air to the next hop base station. The next hop gNB can be another IAB node or a fixed base station (aka donor IAB) which has a wired connection to the 5G core network. Jamming any of the backhaul links between the mIAB node and donor IAB, can disrupt connectivity to all UEs which are served by the victim gNB [2].

Labelling:

* Sub-technique(s):
* Applicable Tactics: Impact

Metadata:

* Architecture Segment: RAN
* Platforms: 5G
* Permissions required: None
* Data Sources:
* Theoretical/Observed:

Procedure Examples

|  |  |
| --- | --- |
| **Name** | **Description** |
| IAB or mIAB node backhaul is jammed by adversary. | Adversary monitors transmissions on the IAB node backhaul links with a wireless sniffer device. Then it starts transmitting bogus RF signal with enough transmit power to jam the DL & UL communications on the backhaul connection. This will disrupt connectivity for all UEs which are connected to the victim gNB. |

Mitigations

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| --- | --- |
| **ID** | **Use** |
|  |  |

Pre-Conditions

|  |  |
| --- | --- |
| **Name** | **Description** |
| Adversary in the same vicinity as victim gNB | Adversary must be positioned in the same area as the victim gNB with a wireless sniffer device and a jamming device equipped with sufficient transmit power. |

Critical Assets

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| --- | --- |
| **Name** | **Description** |
|  |  |

Detection

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| --- | --- |
| **ID** | **Detects** |
|  |  |

Post-Conditions

|  |  |
| --- | --- |
| **Name** | **Description** |
|  |  |

References

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| --- | --- |
| **Name** | **URL** |
| 5G Americas White Paper: Innovations in 5G Backhaul Technologies; IAB, HFC & FIBER”, June 2020. | https://www.5gamericas.org/wp-content/uploads/2020/06/Innovations-in-5G-Backhaul-Technologies-WP-PDF.pdf |
| 3GPP TS 38.401: “NG-RAN; Architecture description”. | https://portal.3gpp.org/desktopmodules/Specifications/SpecificationDetails.aspx?specificationId=3219 |