

# RADIUS Accounting Assurance

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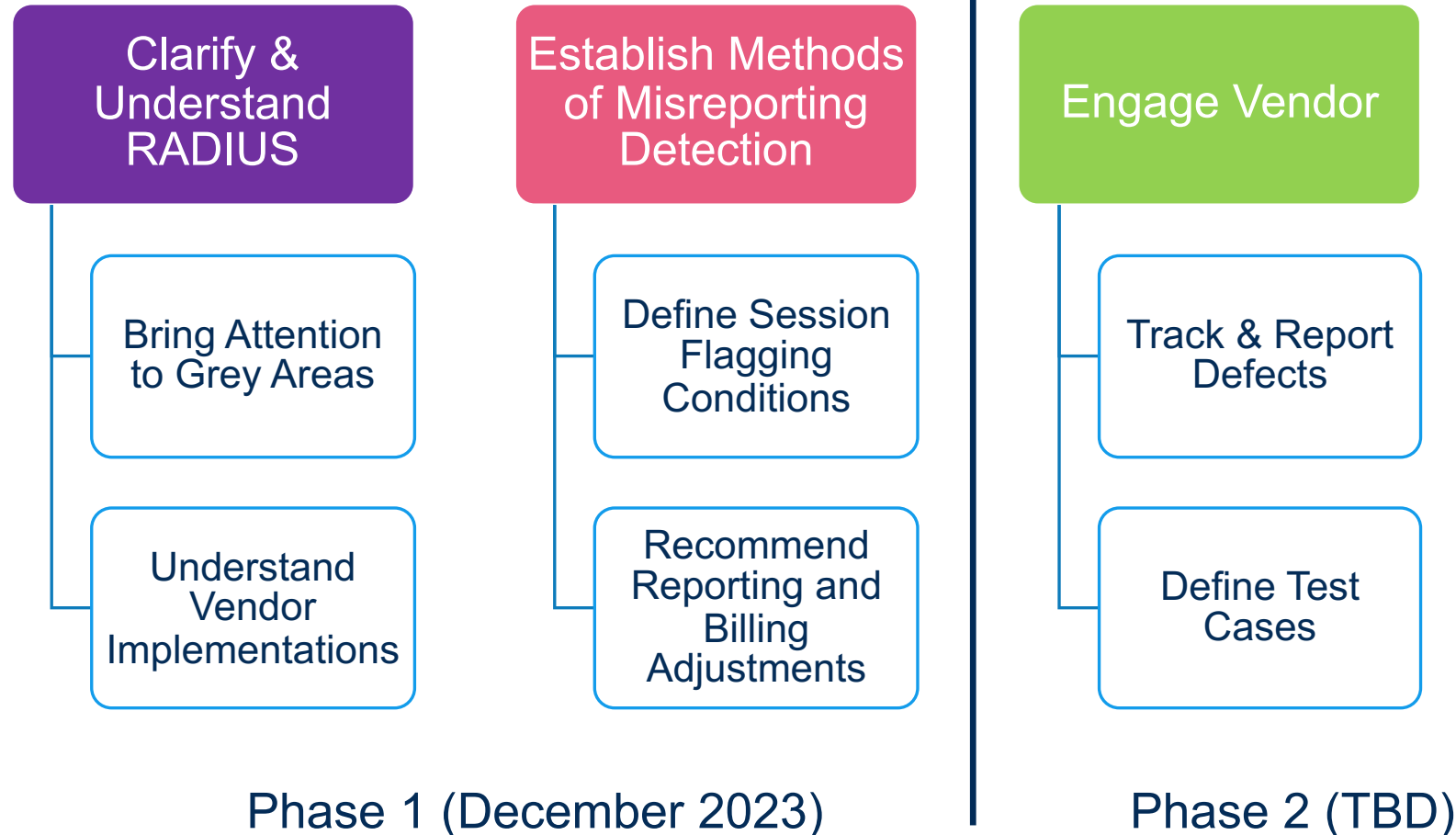
IETF 118 RADEXT

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# Agenda

- Background of WBA RADIUS Accounting Assurance Project
  - Objectives
  - Who we are: Leadership Team, Contributors and Participants
- Issues in RADIUS Accounting
  - Grey Areas
  - Misreporting
- Actions Taken to Address Misreporting in RADIUS Accounting

# Objective: Address Ambiguity in RADIUS Accounting



# Leadership Team and Contributors

- Leadership Team
  - Ryan Blossom (Single Digits)
  - Tim Tweedle (AT&T)
- Contributors include individuals from:
  - Roaming Hubs
  - Wi-Fi Equipment Vendors
  - Identity Providers (IDPs)
  - Access Network Providers (ANPs)

# Grey Areas in RADIUS Accounting

## 1. Uniqueness of Acct-Session-Id and Acct-Multi-Session-Id

- Sometime Acct-Session-Id and/or Acct-Multi-Session-Id is not unique enough

## 2. Meaning of Acct-Multi-Session-Id

- No standardized format, some vendors do not include it
- RFC 3580 suggests its use in roaming scenarios and a possible format
- Vendor survey also pointed out use of Acct-Multi-Session-Id as useful in roaming

## 3. Number of Class attributes supported in echo

- Multiple RADIUS hops add Class in Access-Accept to aid in mediation
- Unknown if there is an upper limit to how many Class attributes are echoed

## 4. Signaling internal issues/errors in AP/WLC

- How should accounting messages be formulated by client when internal error is seen?
- Common practice is to set Acct-Session-Time to 0, per vendor survey

# RADIUS Accounting Filter Thresholds

## Velocity

•  $\text{Throughput (Mbps)} > 2048$

## Exact Gigaword

•  $\text{Acct-Input-Gigawords} > 0 \text{ AND } \text{Acct-Input-Octets} = 0$   
•  $\text{Acct-Output-Gigawords} > 0 \text{ AND } \text{Acct-Output-Octets} = 0$

## Packet Size

•  $\text{Total\_Input\_Bytes} / \text{Acct-Input-Packets} > 9000$   
•  $\text{Total\_Output\_Bytes} / \text{Acct-Output-Packets} > 9000$

## Session Duration

•  $\text{Acct-Session-Time} = 0$

## Packet Count

•  $\text{Acct-Input-Packets} = 0 \text{ AND } \text{Total\_Input\_Bytes} > 0$   
•  $\text{Acct-Output-Packets} = 0 \text{ AND } \text{Total\_Output\_Bytes} > 0$



- RADIUS attributes are shown in red.
- Calculated attributes are shown in purple.

# Flagged Accounting Sessions

- Significant amount of tonnage from small fraction of sessions
- Dataset:
  - Multiple Access Network Provider (i.e., hotspot operator) networks
  - Accounting Stop records from September 1st to September 14th, 2023

