

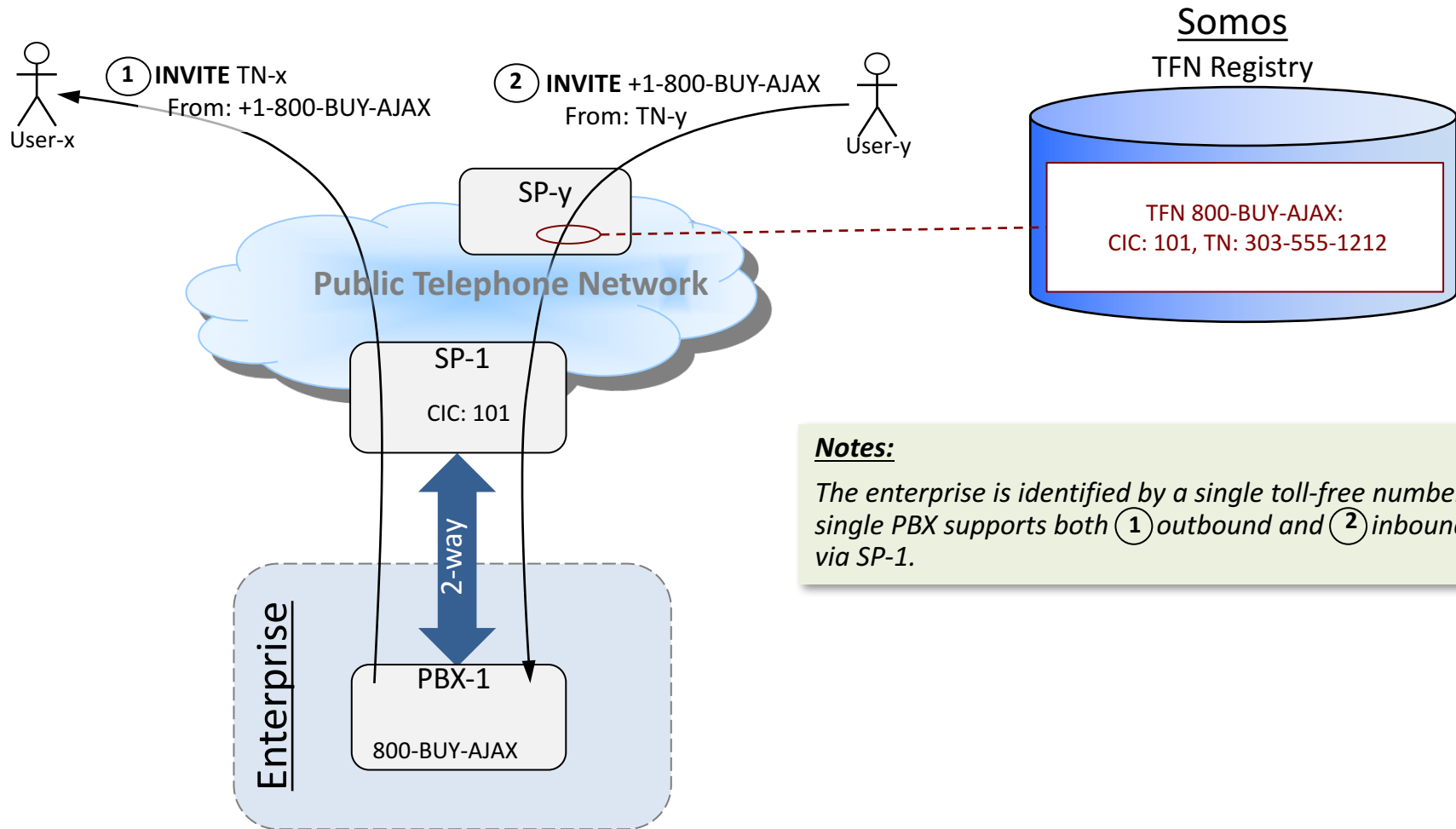
# Support of PoP for Toll-Free and Local Number

Chris Wendt, David Hancock

# Contents

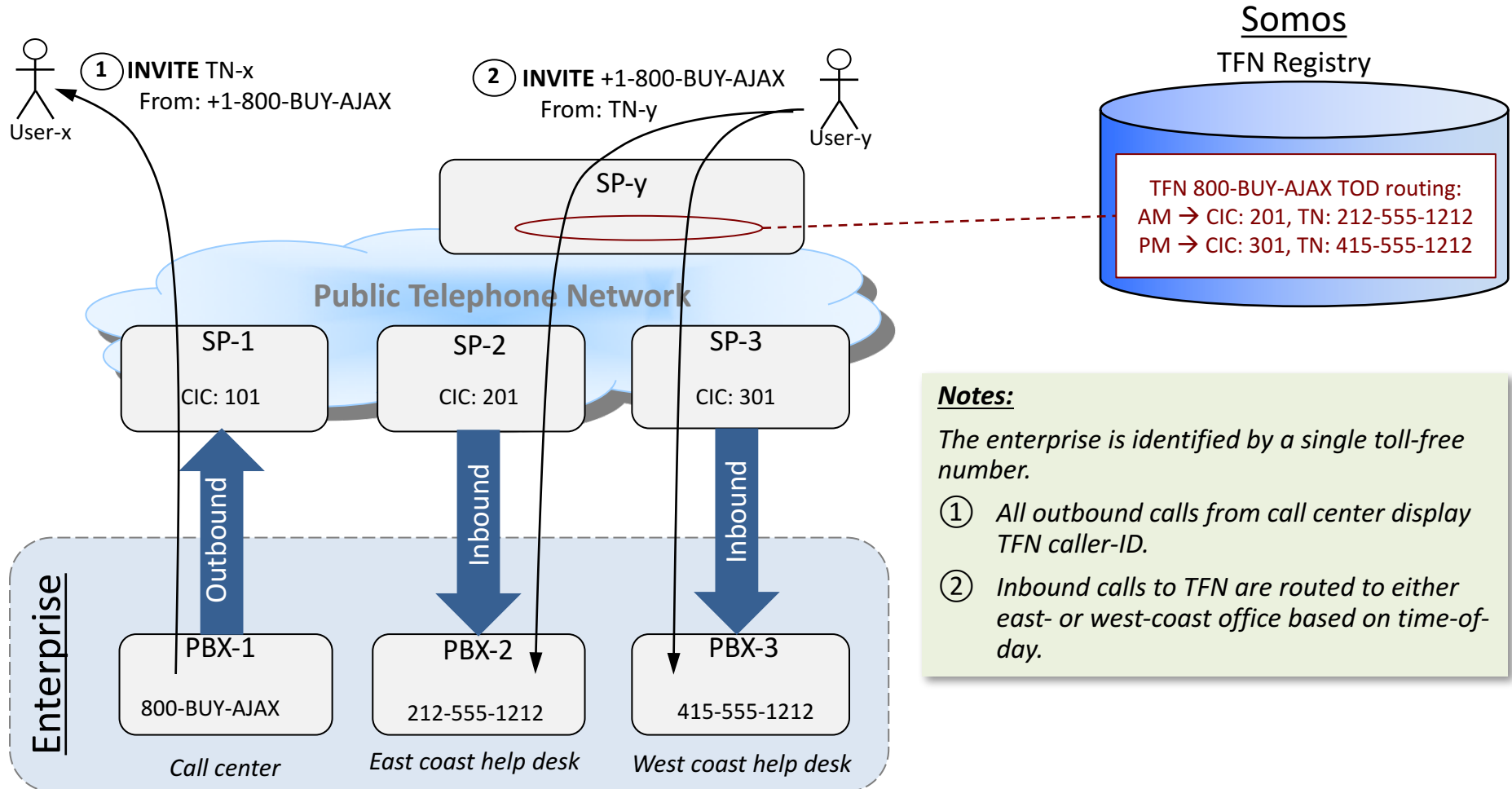
- Toll-Free Use Cases
  - 1) Single-location enterprise served by single SP
  - 2) Multi-location enterprise with time-of-day TFN routing via multi-SPs
  - 3) Single-location enterprise with redundant routing via multi-SPs
- Local Number Use Case
  - 4) Multi-location enterprise provides local TN caller-ID
- Proposed TN-PoP Architecture

# TFN Use Case 1 description – single-location enterprise served by single SP



**Notes:**  
The enterprise is identified by a single toll-free number. A single PBX supports both ① outbound and ② inbound calls via SP-1.

# TFN Use Case 2 description – multi-location enterprise with TOD TFN routing

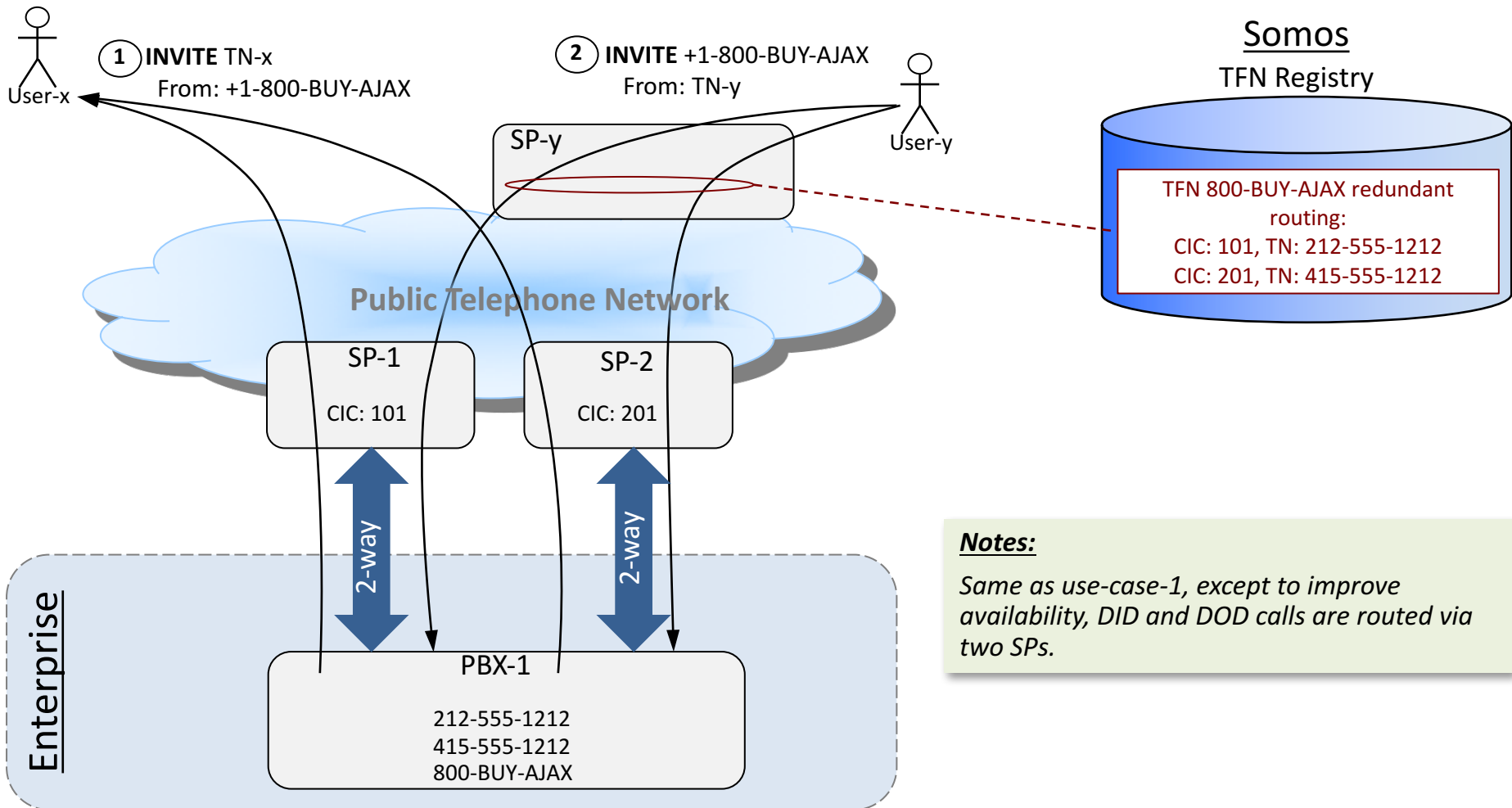


**Notes:**

*The enterprise is identified by a single toll-free number.*

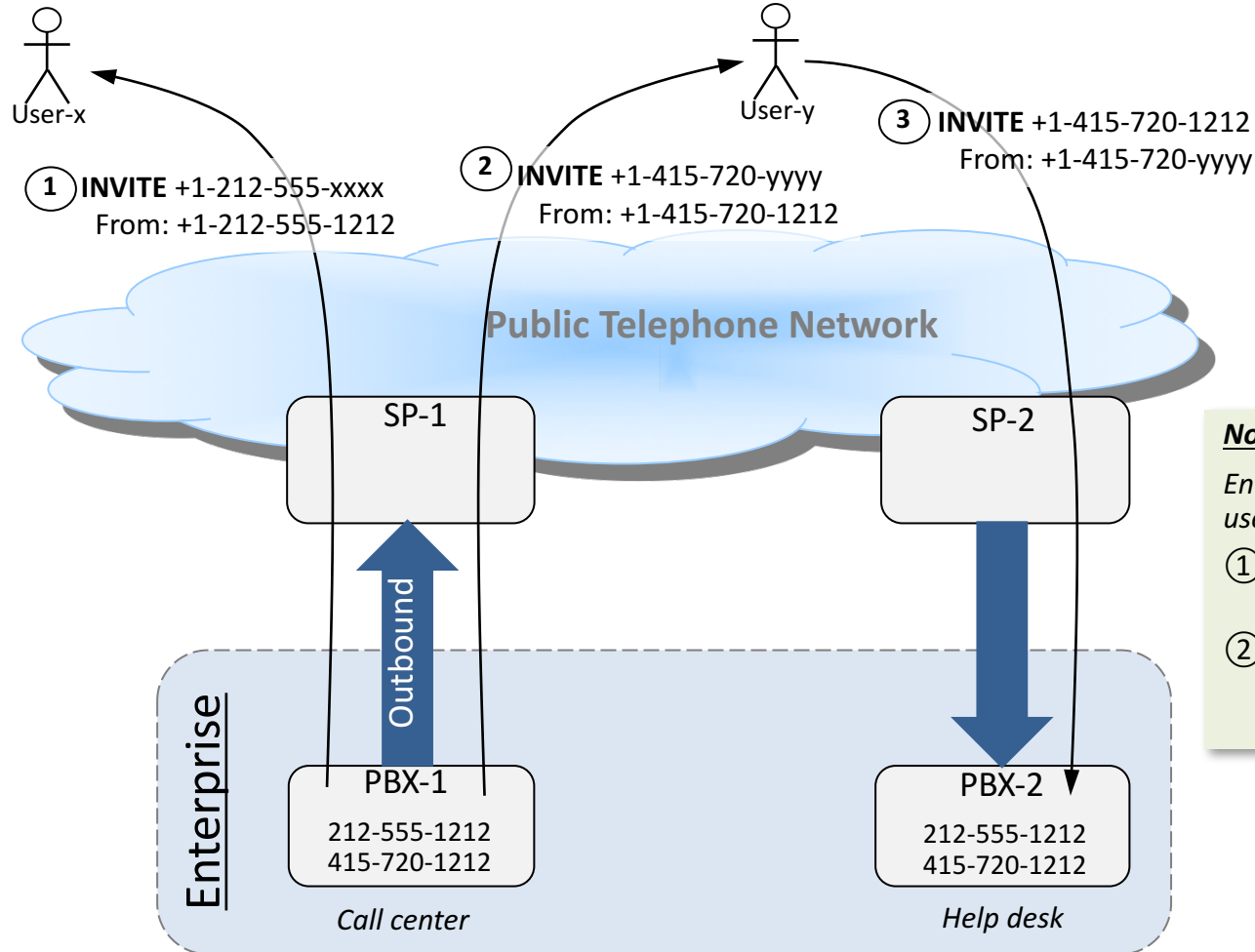
- ① All outbound calls from call center display TFN caller-ID.
- ② Inbound calls to TFN are routed to either east- or west-coast office based on time-of-day.

# TFN Use Case 3 description – single-location enterprise with redundant routing via multi-SPs



**Notes:**  
Same as use-case-1, except to improve availability, DID and DOD calls are routed via two SPs.

# Local Number Use Case 4 – multi-location enterprise provides local TN caller-ID



**Notes:**  
*Enterprise is identified by TN local to called user.*  
① & ② *Outbound calls initiated by call center display local caller-ID.*  
② *When user dials local enterprise number, calls are routed to centralized help desk via SP-2.*

# TN-PoP Architecture

# PoP Architecture Notes

- Define two new functions/roles
  - TN Provider
  - Customer Application Function
- TN Provider: entity that delegates TNs to another entity
  - E.g., LEC Service Provider, RespOrg
- Customer Application Function: entity that receives the delegated TNs
  - E.g., Enterprise PBX, Outbound dialing service, Legitimate spoofing service
- The TN Provider is responsible for providing PoP certificates to the Customer Application Function



# TN-PoP Architecture to support TFN, local TN, and other cases

