SIP PUSH

draft-holmberg-sipcore-sip-push
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WHAT IS THIS?

- <u>NOT</u> A PUSH NOTIFICATION MECHANISM USING SIP MESSAGES

- A MECHANISM FOR TRANSPORTING PUSH NOTIFICATION PARAMETERS BETWEEN A PUSH SUBSCRIBER AND A PUSH NOTIFIER USING SIP, FOR USAGE WITH EXISTING PUSH NOTIFICATION SERVICES
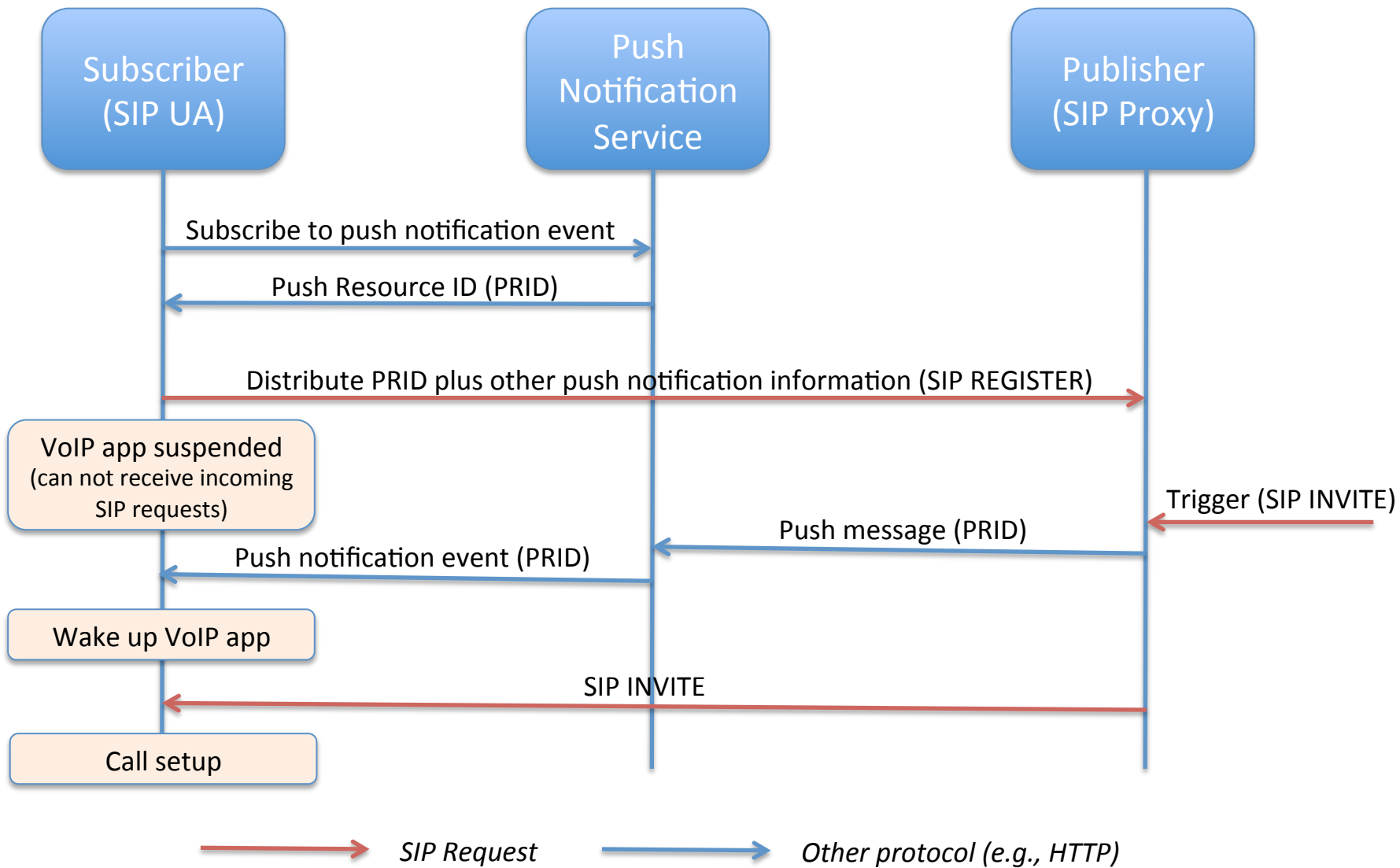 - Apple Push Notification service, Firebase Cloud Messaging, RFC 8030-based services, etc…
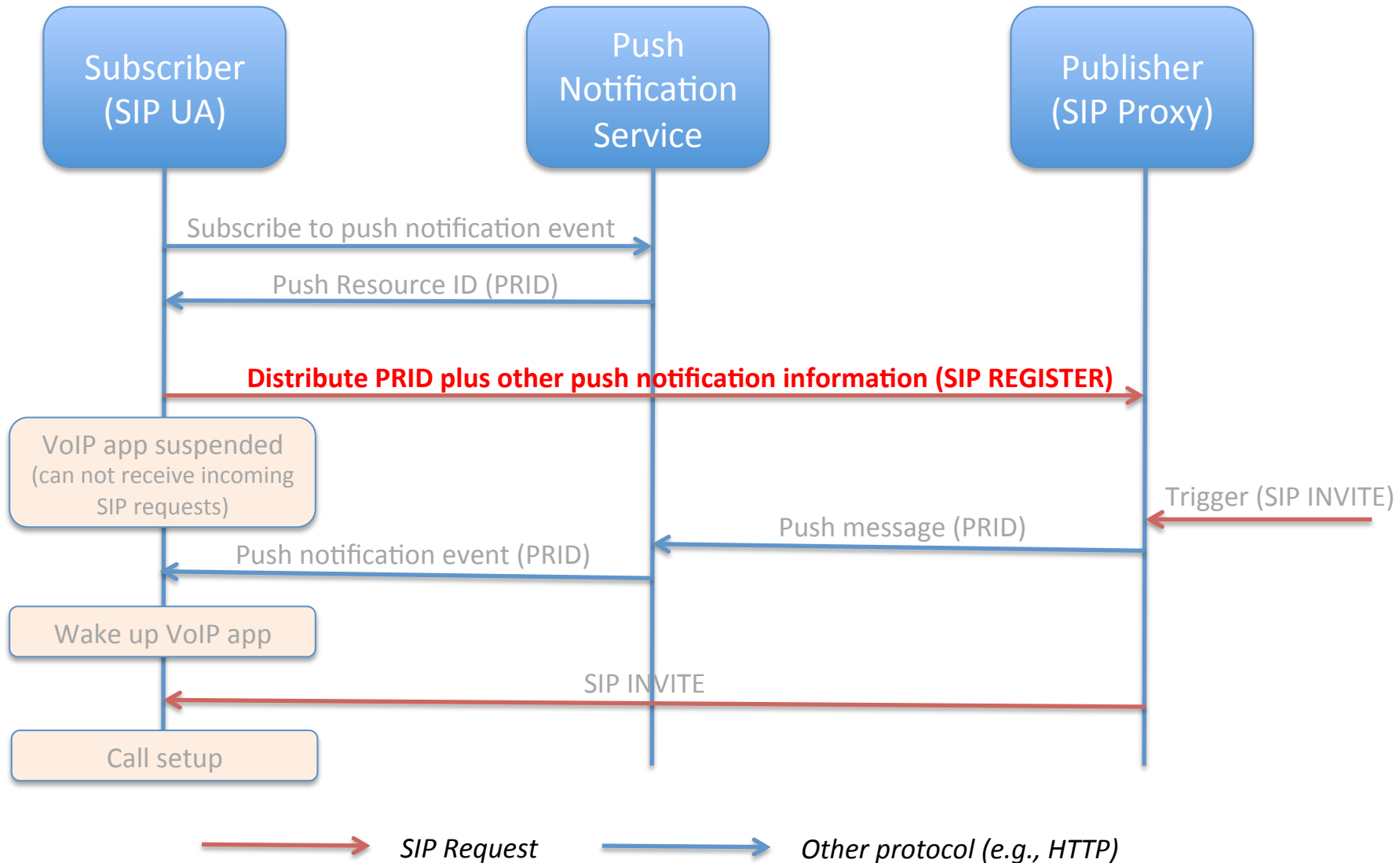
WHAT'S THE PROBLEM?

PROBLEM IN A NUTSHELL

- VoIP apps in iOS have been using background mode (aka legacy VoIP architecture), that allowed them to wake up periodically for receiving events (e.g., SIP INVITE request) from the network
  - This was replaced by the PushKit architecture in iOS 8
  - Apple has deprecated support for legacy VoIP architecture in iOS9 (built with Xcode 7)
  - Apple has removed the support for legacy VoIP architecture in iOS10 (built with Xcode 8)
- Apple forces VoIP apps to take PushKit architecture in to use with Xcode 8
  - VoIP Apps needs to add support for the PushKit
  - Network needs to wake up the client for events via Apple Push Notification Service (APNs)
- Official note from Apple:
  - https://developer.apple.com/library/content/qa/qa1938/_index.html#//apple_ref/doc/uid/DTS40017564

- Android does not currently require, but recommends, usage of push notifications for waking up applications

ARCHITECTURE

Subscriber (SIP UA)   Push Notification Service   Publisher (SIP Proxy)

Subscribe to push notification event

Push Resource ID (PRID)

Distribute PRID plus other push notification information (SIP REGISTER)

VoIP app suspended (can not receive incoming SIP requests)

Trigger (SIP INVITE)

Push message (PRID)

Push notification event (PRID)

Wake up VoIP app

SIP INVITE

Call setup

SIP Request   Other protocol (e.g., HTTP)

SCOPE

THE SIP

- 4 new SIP-URI parameters
  - pn-prid
    - Carries the PRID value
  - pn-type
    - Carries value (pns-provider) identifying the push notification service
    - Carries service-specific parameters (pns-param)
  - pn-enccode & pn-enckey
    - Allows usage of draft-ietf-webpush-encryption for push payload e2e (publisher-subscriber) encryption
- New IANA sub-registry
  - Registering pns-provider values
  - Draft registers values for APNs and FCM

THE EXAMPLES

SIP REGISTER: UA -> PROXY -> REGISTRAR

REGISTER sip:alice@example.com SIP/2.0
Via: SIP/2.0/UDP alicemobile.example.com:5060;branch=z9hG4bKnashds7
Max-Forwards: 70
To: Alice <sip:alice@example.com>
From: Alice <sip:alice@example.com>;tag=456248
Call-ID: 843817637684230@998sdasdh09
CSeq: 1826 REGISTER
Contact: <sip:alice@alicemobile.example.com;**pn-type=acme:acme-param;pn-prid=ZTY4ZDJlMzODE1NmUgKi0K**>
Expires: 7200
Content-Length: 0

SIP INVITE: REGISTRAR -> PROXY -> UA

INVITE sip:alice@alicemobile.example.com;**pn-type=acme:acme-param;pn-prid=ZTY4ZDJlMzODE1NmUgKi0K** SIP/2.0
Via: SIP/2.0/UDP registrar.example.com:5060;branch=z9hG4bKnaxhds8
Max-Forwards: 70
To: Alice <sip:alice@example.com>
From: Bob <sip:bob@example.com>;tag=556859
Call-ID: 5454854854954@998sdaXdh12
CSeq: 101 INVITE
Contact: <sip:bob@bobmobile.example.com>

<SDP>

WHO NEEDS THIS?

- Operators need a solution <u>now</u>, and are looking for solutions <u>as we speak</u>
- Different ideas for proprietary (non-interoperable) solutions floating around
- Preference for a standardized solution if available

SO, WHAT'S NEXT?

- Add SIP PUSH to the SIPCORE charter
- Adopt draft-holmberg-sipcore-sip-push as the base for the charter delivery

THANK YOU!