

XCON CCMP, AN OPEN PROTOCOL FOR CONTROLLING AN OPEN SOURCE VIDEO CONFERENCING SERVER

Simon Morlat, June 12, 2024

SPEAKER AT
CW2con'24

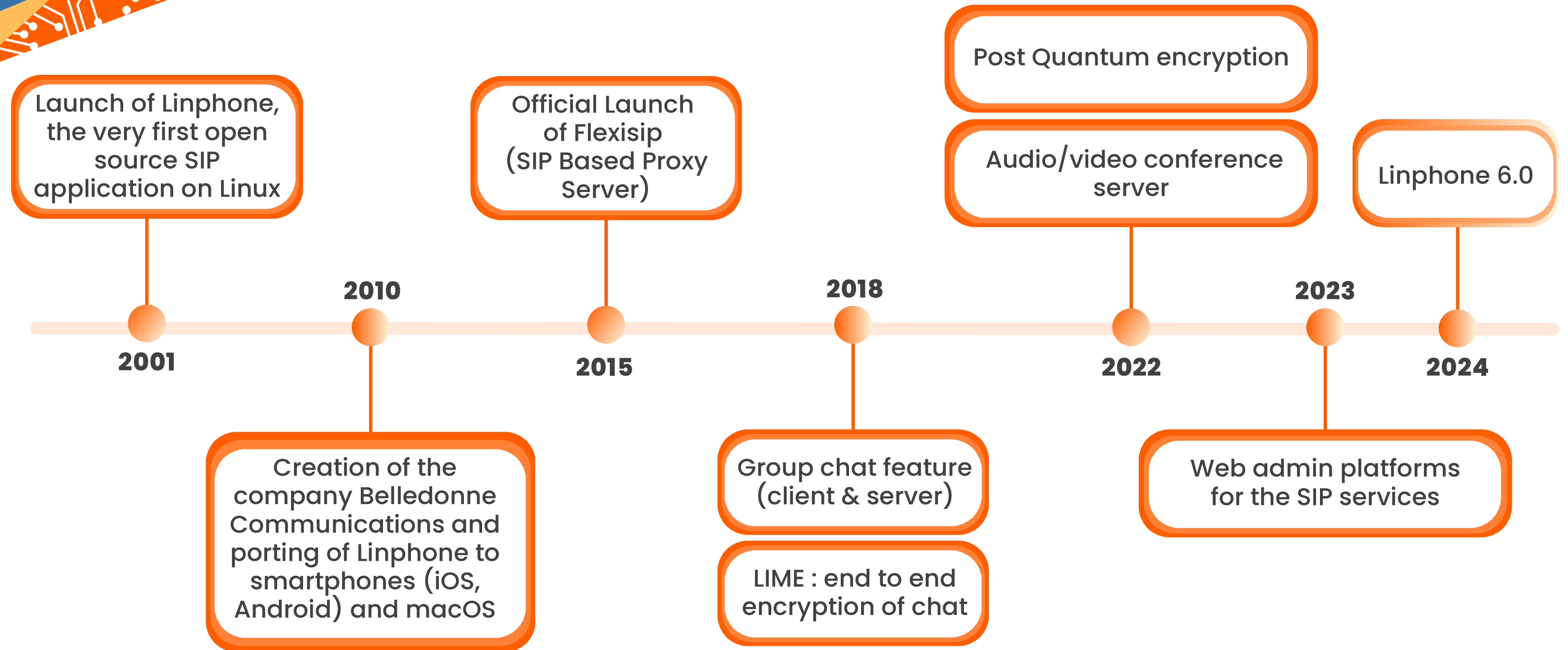


Simon MORLAT,

The original author of Linphone and Co-founder
of Belledonne Communications



THE STORY OF BELLEDONNE COMMUNICATIONS





CONTENTS

I. Understanding XCON CCMP

II. CCMP Features and Benefits

III. Using and Integrating CCMP

IV. Additional Resources



I. UNDERSTANDING XCON CCMP



WHAT IS XCON CCMP?

- IETF initiative
- XCON – RFC5239 – a framework for centralized conferencing
- CCMP : RFC6503 – Centralized Conferencing Manipulation Protocol
- RFC6501 – Conference Information Data Model for centralized conferencing

1 Schedule the conference

2 Participate to the conference



XCON CCMP OVERVIEW



MAIN CHARACTERISTICS OF CCMP

- XML requests and responses carried over HTTPS
- REST semantic (optional but recommended)
- Abstraction of conferencing technology



II. CCMP FEATURES AND BENEFITS





WHAT YOU CAN DO WITH CCMP?

1. **Create or modify** a conference object on the conferencing system, specifying:



Allowed users (invitees)



Date/time/duration/repeat



Admission policy



Side bars conferences ...

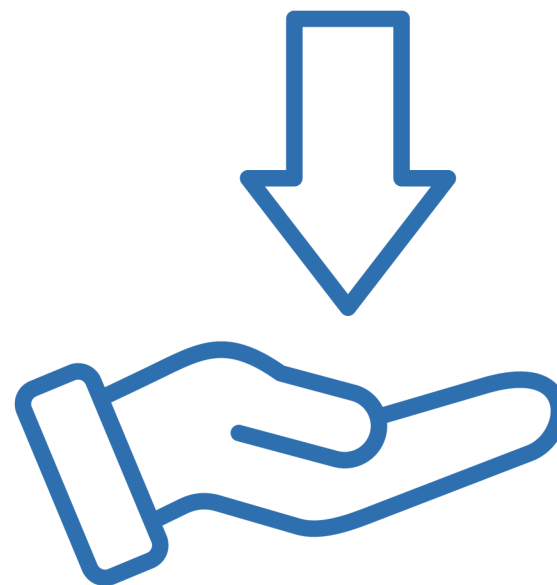
2. **Retrieve** list of scheduled conferences



ABSTRACTION OF CONFERENCING TECHNOLOGY

NEED

- Several **access protocol**: SIP, XMPP, proprietary signaling protocol associated with WebRTC
- A user may use one or some of them, at its convenience





ABSTRACTION OF CONFERENCING TECHNOLOGY

PROPOSED SOLUTION

XCON-URI (eg *xcon-uri:ijojfozjoefj@example.net*) to identify a conference object, such object can have multiple access methods:

sip:focus@example.org;conf-id=ijojfozjoefj

tel:+33952636505

https://conf.example.org?id=ijojfozjoefj

XCON-USERID (eg *xcon-userid:bob@example.net*) to identify a user, such user have multiple accounts to reach the conference

sip:bob@example.org

tel:07XXXXXXX



Implies a database for mapping users and their respective communication accounts (unspecified).

Can be **LDAP, CardDav...**



WHAT ARE THE BENEFITS OF USING CCMP ?

Standardisation of interface
with conferencing systems

Generic integration within **collaboration**
tools/ web site / softphones ...

Reduced effort to integrate
with conferencing systems





WHAT IT LOOKS LIKE (1/2) - A BASIC CONFERENCE CREATION REQUEST

```
PUT /xcon-userid:alice@example.com HTTP/1.1
```

```
Content-type: application/xml
```

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
  <ccmp:ccmpRequest
    xmlns:info="urn:ietf:params:xml:ns:conference-info"
    xmlns:ccmp="urn:ietf:params:xml:ns:xcon:ccmp"
    xmlns:xcon="urn:ietf:params:xml:ns:xcon-conference-info">
    <ccmpRequest
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
      xsi:type="ccmp:ccmp-conf-request-message-type">
      <confUserID>xcon-userid:alice@example.com</confUserID>
      <operation>create</operation>
      <ccmp:confRequest/>
    </ccmpRequest>
  </ccmp:ccmpRequest>
```



WHAT IT LOOKS LIKE (2/2) - CREATION RESPONSE

```
<ccmp:ccmpResponse xmlns:xcon="urn:ietf:params:xml:ns:xcon-conference-info"
xmlns:info="urn:ietf:params:xml:ns:conference-info" xmlns:ccmp="urn:ietf:params:xml:ns:xcon:ccmp">
  <ccmpResponse xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:type="ccmp:ccmp-conf-response-message-type">
    <confUserID>xcon-userid:Alice@example.com</confUserID>
    <confObjID>xcon:abcdefg@example.com</confObjID>
    <operation>create</operation> <response-code>200</response-code>
    <ccmp:confResponse>
      <confInfo entity="xcon:8977794@example.com">
        <info:conference-description>
          <info:display-text>Basic conference initiated by Alice</info:display-text>
          <info:conf-uris><info:entry>
            <info:uri>sips:focus@example.com;conf-id=abcdefg</info:uri>
          </info:entry></info:conf-uris>
        </info:conference-description>
      </confInfo>
    </ccmp:confResponse>
  </ccmpResponse>
</ccmp:ccmpResponse>
```



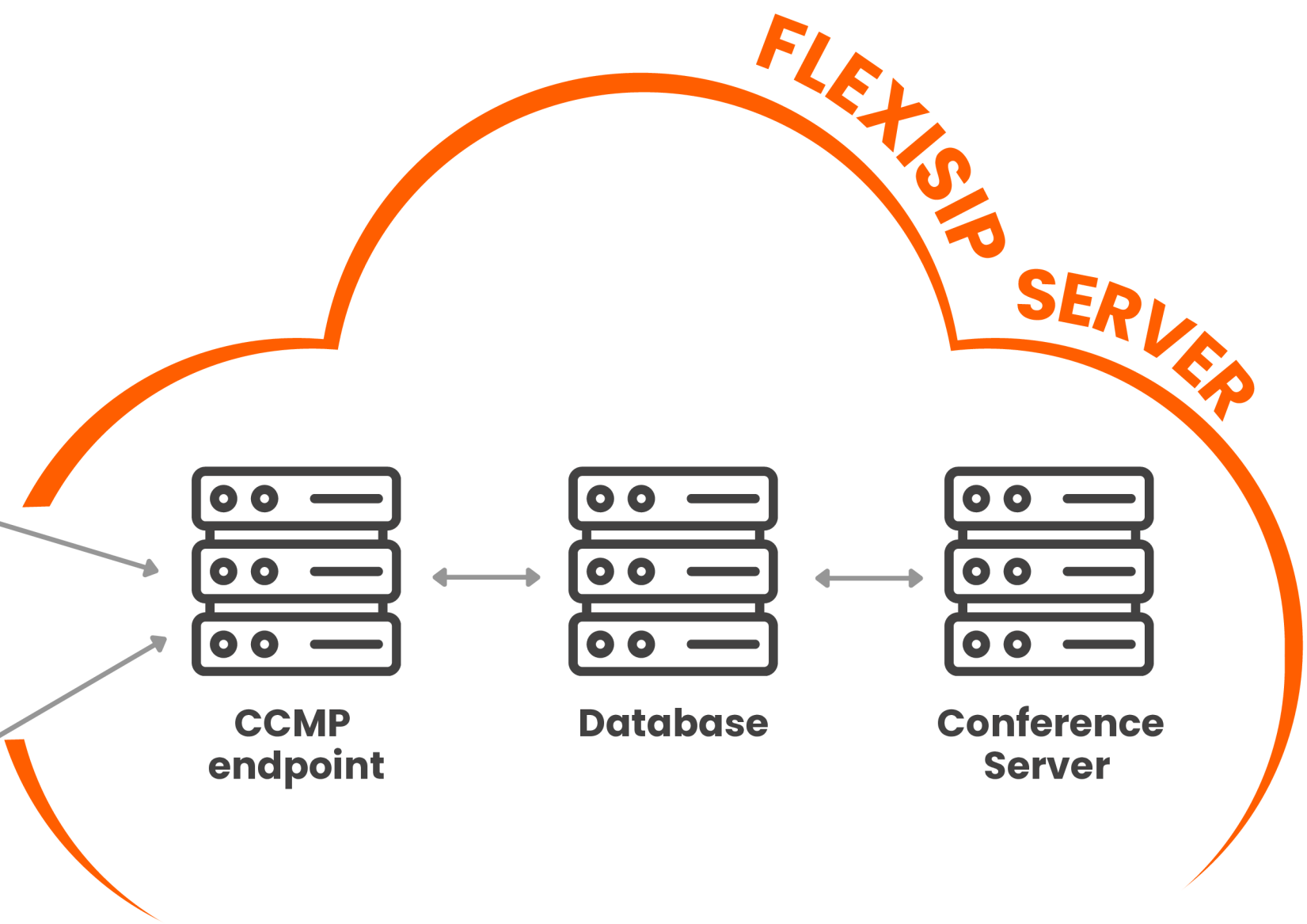
III. USING AND INTEGRATING CCMP

HOW WE USE IT IN OUR PRODUCTS

LINPHONE APPLICATION

Linphone SIP account

THE HEXAGONE PROJECT





LINPHONE APPLICATION

Rechercher un contact, appeler ou envoyer un message

Nouvelle réunion Créer

Réunion Broadcast

Ajouter un titre

1h

Toute la journée

Send invitation to participants

Appels

Contacts

Conversations

Réunion

Rechercher un contact, appeler ou envoyer un message

Réunions

Search conversations

Décembre 2023

4 - 10 Décembre

Lundi **4** Aucune réunion aujourd'hui

Conférence MKT
10:00 - 12:00

Jeudi **7**

Meeting with Sara
10:00 - 12:00

Meeting with James
10:00 - 12:00

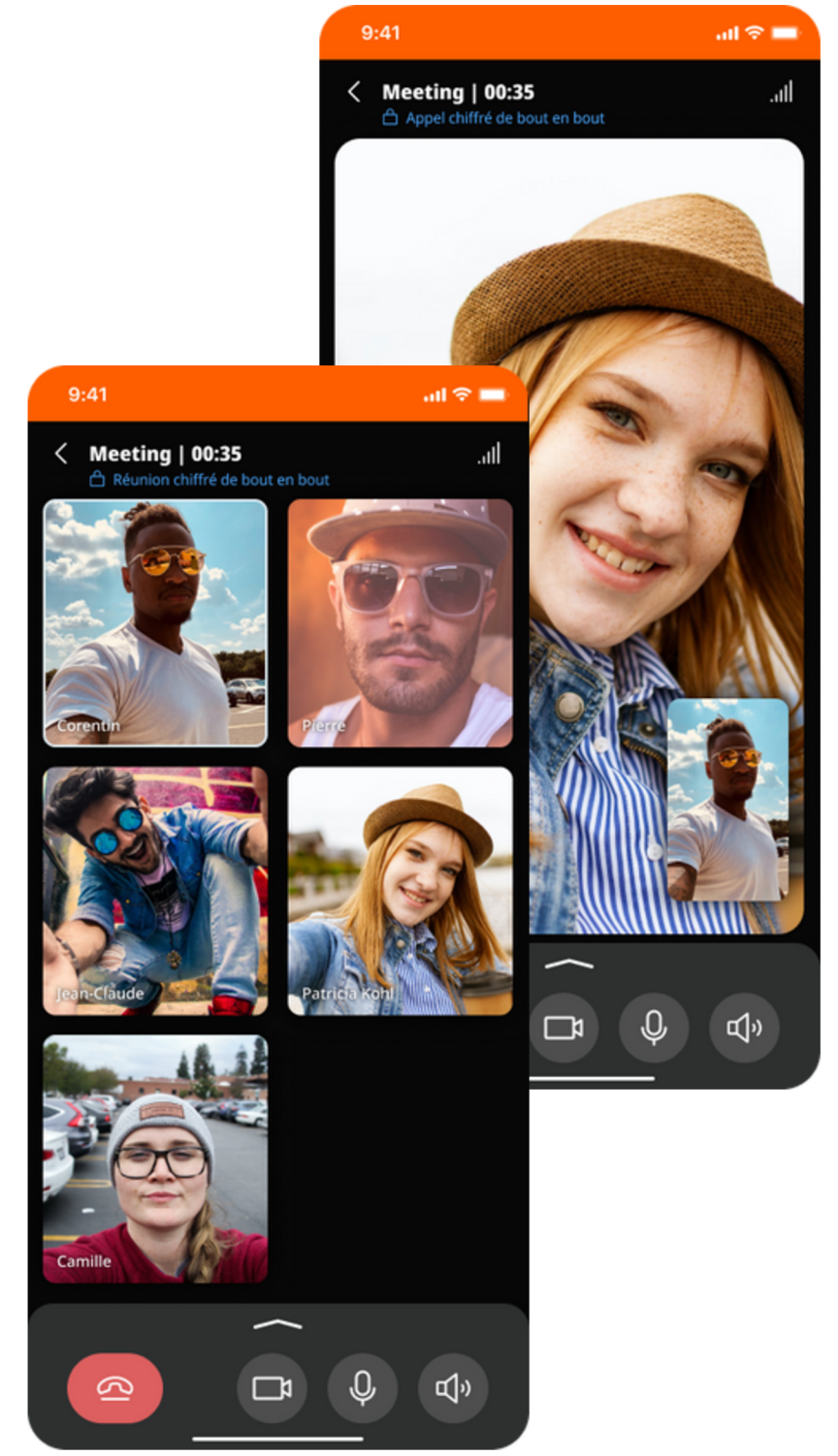
11 - 17 Décembre

Mon. **11**

Conférence DEV
14:00 - 18:00

Janvier 2024

01 - 07 Janvier





IV. ADDITIONAL RESOURCES



DOCUMENTATION

- **IETF RFCs:**

- <https://datatracker.ietf.org/doc/html/rfc5239> (XCON Framework)
- <https://datatracker.ietf.org/doc/html/rfc6501> (Conference Data model)
- <https://datatracker.ietf.org/doc/html/rfc6503> (CCMP)
- <https://datatracker.ietf.org/doc/html/rfc6504> (Call flow examples)

- **Website:**

- <https://linphone.org>



**DO YOU HAVE ANY QUESTIONS?
IT'S YOUR TURN!**



THANK YOU !