

# sysmocom

sysmocom - s.f.m.c. GmbH



## OsmoBSC A / SCCPlite / 3GPP AoIP Options

by Harald Welte

Copyright © 2017 sysmocom - s.f.m.c. GmbH

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.3 or any later version published by the Free Software Foundation; with the Invariant Sections being just 'Foreword', 'Acknowledgements' and 'Preface', with no Front-Cover Texts, and no Back-Cover Texts. A copy of the license is included in the section entitled "GNU Free Documentation License".

The AsciiDoc source code of this manual can be found at <http://git.osmocom.org/osmo-gsm-manuals/>

**HISTORY**

NUMBER	DATE	DESCRIPTION	NAME
0.1	31 May 2017	Initial version of the proposal for internal discussion.	Harald Welte

## Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
<b>2</b>	<b>Overview</b>	<b>1</b>
2.1	Classic GSM RAN with E1 based Abis and E1 A	1
2.2	OsmoBSC 2010-2017: IPA-style A over SCCPlite	2
2.3	OsmoBSC 2017+: 3GPP AoIP + Abis/IP	4
2.4	OsmoBSC 2017+: 3GPP AoIP + Abis/E1	6

## Introduction

This document serves as a paper to illustrate the different configurations of OsmoBSC in terms of integration with BTSs and MSCs.

The document should accompany us in the 2017 development cycle which includes the *death of the NITB*, i.e. the move away from OsmoNITB to having OsmoBSC in all configurations, whether with a proprietary/external MSC or with OsmoMSC.

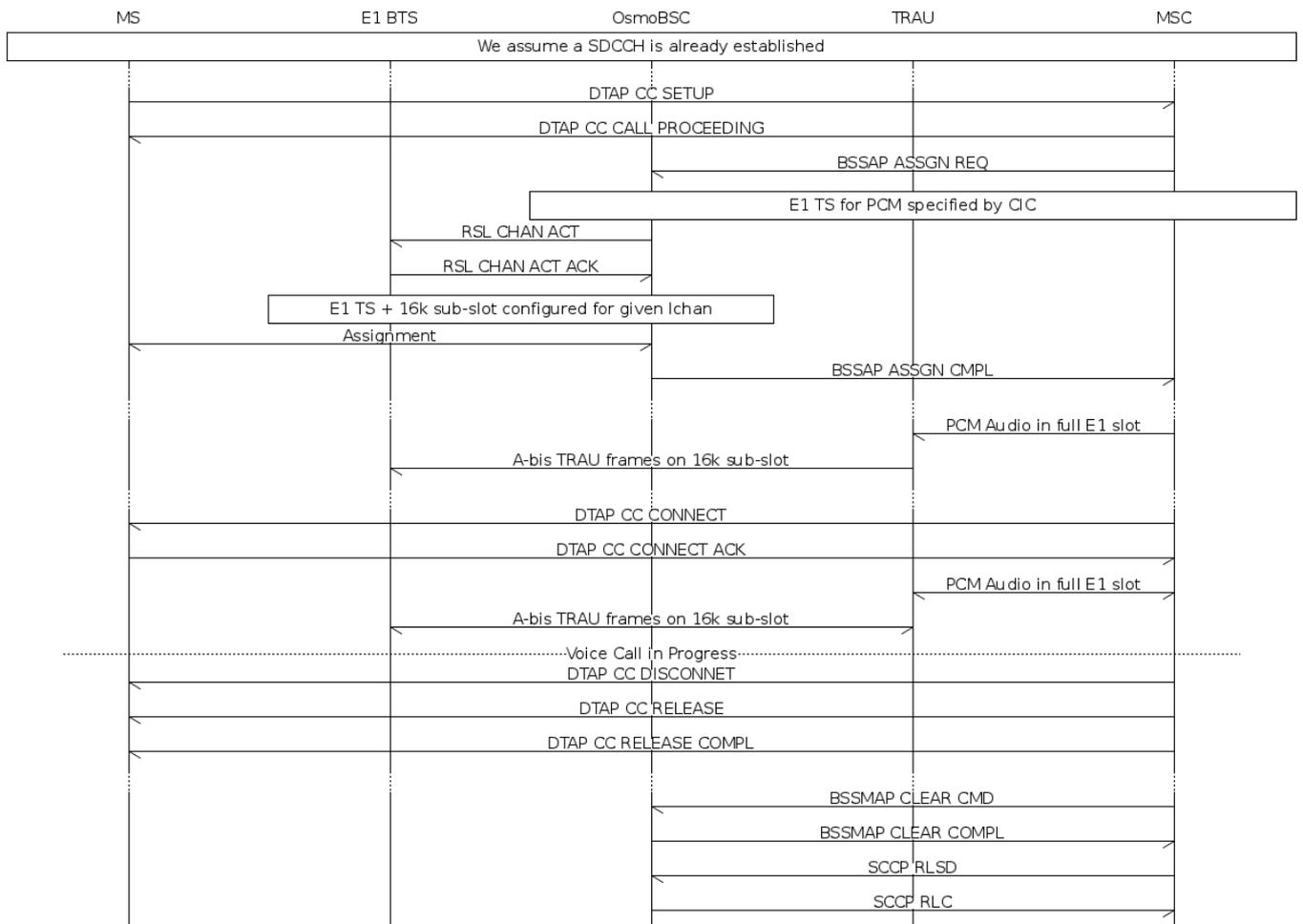
Particular attention is spent on the user plane, including aspects such as

- user plane transport address handling
- use of MGCP (Media Gateway Control Protocol)
- the (required) evolution of `osmo-bsc_mgcp`
- not loosing classic TDM (E1/T1) BTS support when moving from OsmoNITB to split OsmoBSC + OsmoMSC setup

## Overview

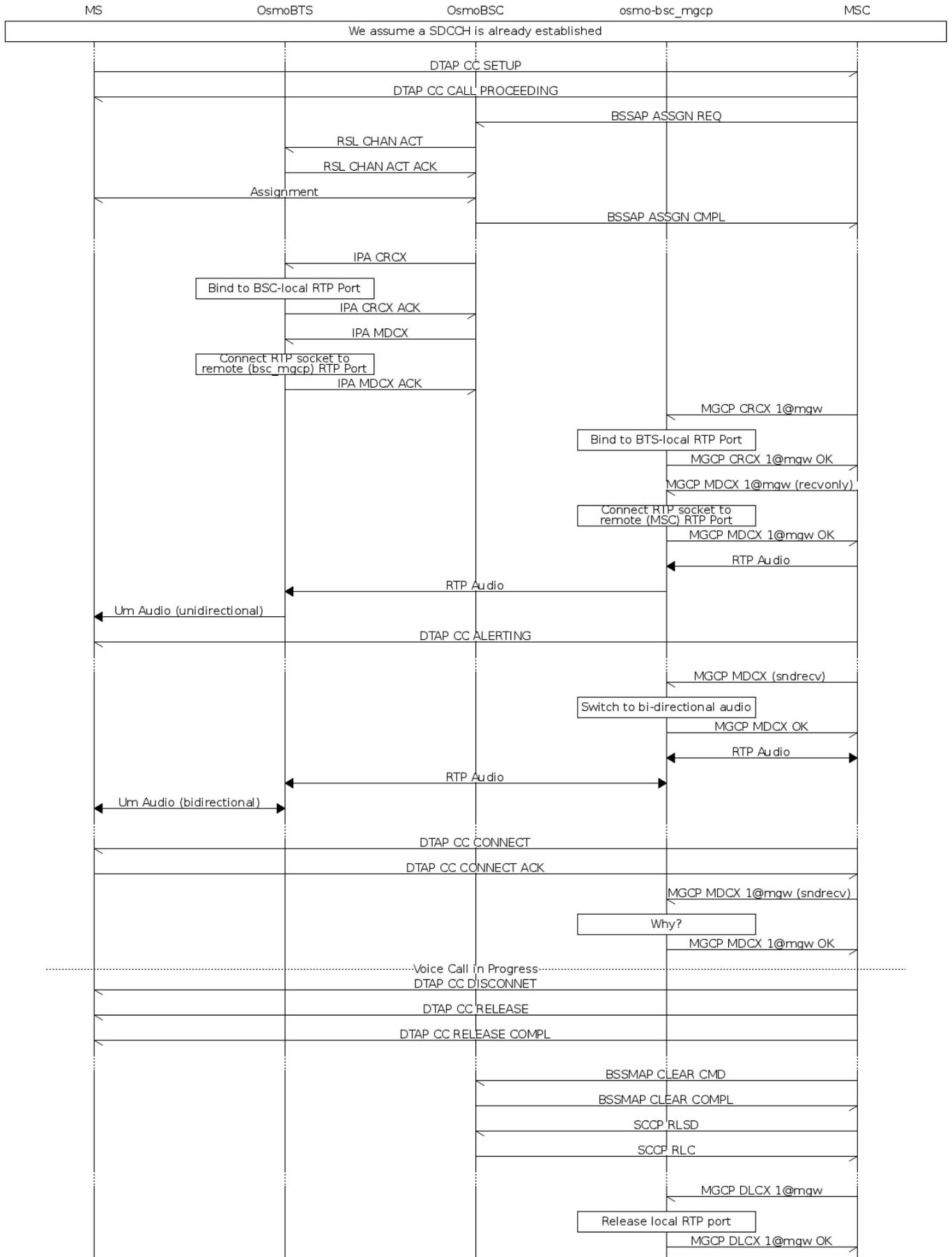
### Classic GSM RAN with E1 based Abis and E1 A

This configuration was actually never supported by OpenBSC, as E1 BTS support was so far for NITB only, but not for OsmoBSC.



## **OsmoBSC 2010-2017: IPA-style A over SCCPlite**

This configuration was introduced as early as 2010 in OpenBSC. It allowed the use of IP based BTSs (ip.access nanoBTS as well as all the OsmoBTS supported BTS models) in combination with third-party MSCs implementing a pre-standard, proprietary way of transporting the A interface over IP at a time where the 3GPP specifications only allowed classic TDM transport.

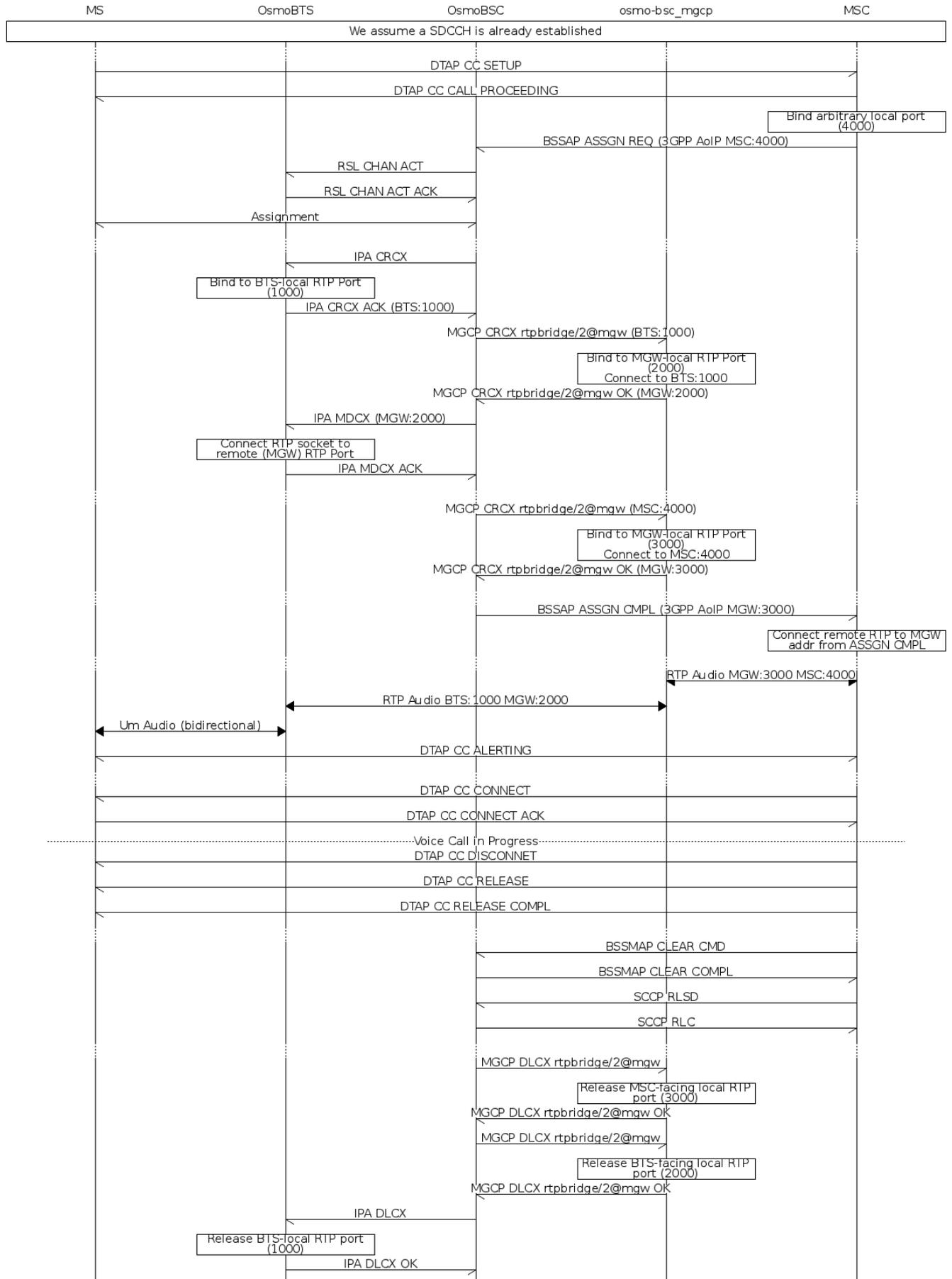


**OsmoBSC 2017+: 3GPP AoIP + Abis/IP**

Release 7 of 3GPP included an official specification on how an interoperable A-over-IP (AoIP) interface shall look like.

As more modern MSCs at operators tend to favor implementing 3GPP AoIP rather than the proprietary SCCPlite based A interface, it becomes necessary for OsmoBSC to support this.

At the same time, for compatibility reasons, the classic SCCPlite support shall be kept, if possible with reasonable effort.



### OsmoBSC 2017+: 3GPP AoIP + Abis/E1

Since OsmoNITB will soon be deprecated, we will use OsmoBSC in all Osmocom GSM network setups, requiring the support for classic E1/T1 based BTSs from OsmoBSC.

