# **NTT DOCOMO**

# Technical Journal

Vol.17

Apr.2016 | No.4

## DOCOMO Today

Making 5G a Reality

## Technology Reports (Special Articles)

## Special Articles on 5G Technologies toward 2020 Deployment

- NTT DOCOMO 5G Activities Toward 2020 Launch of 5G Services -
- 5G Radio Access Technology
- 5G Multi-antenna Technology
- Radio Propagation for 5G
- Future Core Network for the 5G Era
- 5G Trials with Major Global Vendors

### Technology Reports

Technology to Discover Local Events Using Twitter

#### Standardization

Dedicated Core Networks to Isolate Traffic Based on Terminal Type





# **Contents**

| CUII |  |
|------|--|
|      |  |
|      |  |
|      |  |





Making 5G a Reality ......

Takehiro Nakamura

# Technology Reports (Special Articles)



(P.16)

Special Articles on 5G Technologies toward 2020 Deployment

| NTT DOCOMO 5G Activities            |   |
|-------------------------------------|---|
| —Toward 2020 Launch of 5G Services— | 4 |

5G Service Requirement Standardization Strategy

5G Radio Access Technology ...... 16

RAT Waveform NOMA

Antenna elements

(P.29)

5G Multi-antenna Technology 29

Massive-element Antenna Beamforming

Radio Propagation for 5G ------ 40

5G High Frequency Band Radio Propagation Characteristic

Future Core Network for the 5G Era----- 50

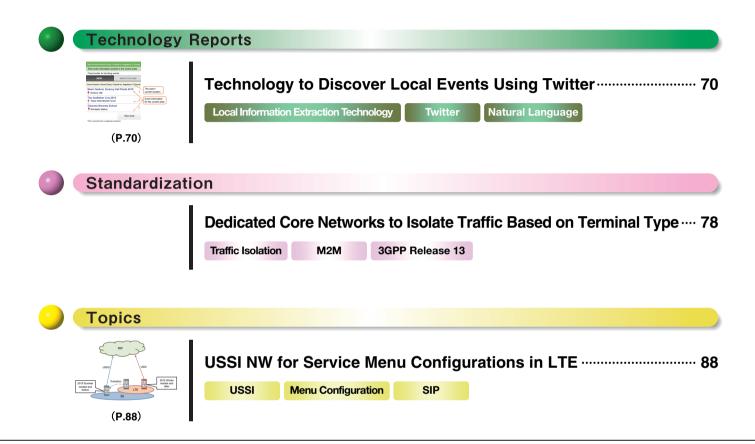
5G Future Core Network Network Slicing

5G Trials with Major Global Vendors ----- 60

5G Trials Trial Collaboration High Frequency Band



(P.60)





Technology Reports (Special Articles) NTT DOCOMO 5G Activities—Toward 2020 Launch of 5G Services— (P.4)

Diverse services envisioned for 5G

# NTT DOCOMO Technical Journal Vol.17 No.4

#### **Editorship and Publication**

NTT DOCOMO Technical Journal is a quarterly journal edited by NTT DOCOMO, INC. and published by The Telecommunications Association.

Editorial Correspondence
NTT DOCOMO Technical Journal Editorial Office
R&D Strategy Department
NTT DOCOMO, INC.
Sanno Park Tower
2-11-1, Nagata-cho, Chiyoda-ku, Tokyo 100-6150, Japan
e-mail: dtj@nttdocomo.com

#### Copyright

©2016 NTT DOCOMO, INC.

Copies of articles may be reproduced only for personal, noncommercial use, provided that the name NTT DOCOMO Technical Journal, the name(s) of the author(s), the title and date of the article appear in the copies.