

CURRICULUM VITAE

I. PERSONAL DATA

Name: **Friedhelm RODERMUND**

Mailing address: Am Steiner Graben 18
56077 Koblenz, Germany

Phone: +49 172 2606489

Email: fred@iotecc.com

II. PROFESSIONAL EXPERIENCE

Summary

Senior expert in telecommunications, Internet of Things (IoT) technology and related standard essential patents (SEPs). More than 30 years of experience within the mobile communications industry, and several years in the IoT domain in various roles such as project management, technology innovation and evolution, standards development, technology strategy, patent creation and patent litigations, and development/introduction of new services.

Recognized standards expert who was actively involved in leading roles in the development of key standards for mobile telephony/data and service enablers across standards development organizations such as 3GPP, ETSI, GSMA, IETF, OMA, and oneM2M. Currently focussing on standards for the Internet of Things including ETSI and 3GPP standards such as 5G and 6G, and OMA Lightweight M2M (LwM2M).

Founder and director of IOTECC GmbH which provides consulting services around technologies and standards enabling the Internet of Things, and consulting and expert services related to patents for mobile telecommunications and IoT.

01/2015 – present IOTECC GmbH

Koblenz, Germany

Founder and CEO

- Mobile telecommunications, Internet of Things (IoT) technology and standards consulting
- Telecommunications and IoT patent consulting
 - Consulting services around telecommunications and IoT patents in particular related to 3GPP, ETSI and OMA standards
 - State of the art/prior art research services related to patent filing e.g. for 5G and 6G
 - Prior art research, essentiality assessment, patent infringement analysis related to litigations and validity actions
 - Advising on IP strategy
 - Advising on Standards Development Organisations (SDO) e.g. ETSI and 3GPP working processes and IPR policy
 - Conducting seminar on Standards Essential Patents (SEPs) for the Internet of Things at the Technical University of Ilmenau, Germany
 - Experienced expert witness (please see section III for a list of supported actions)

11/2014 – 12/2014 Friedhelm Rodermund Consulting

Koblenz, Germany

Internet of Things (IoT) Consultant

- IoT standards development and introduction of new IoT services

GOOGLE EXHIBIT 1021
Google v. Headwater
IPR2026-00439

CURRICULUM VITAE

- 01/2011 – 10/2014** **Vodafone Germany / Vodafone Group R&D** **Düsseldorf, Germany**
- Senior Standards Strategist
- Representing Vodafone in various standardisation bodies
 - Creating technical standards for the Internet of Things
 - Work item lead, technical editor and key contributor of Open Mobile Alliance (OMA) “Lightweight M2M (LwM2M)” – the new standard for the Internet of Things
 - Advising and supporting various IoT/M2M projects related to e.g. smart metering
 - Advising on the introduction of new IoT/M2M technologies and services
 - Leading Proof of Concepts of emerging technologies
 - Involved in innovation projects
 - Supporting the creation and protection of Intellectual Property
- 01/2009 – 12/2010** **Vodafone Germany** **Düsseldorf, Germany**
- Vice Chairman Open Mobile Alliance (OMA) Device Management (DM)
- Responsible for Vodafone’s Device Management standardisation
 - As OMA DM Vice Chairman, co-leading the group, chairing committee meetings and web conferences, steering the technical direction, management of the different work items
 - Editor of several specifications, rapporteur of various work items
 - Support of projects for the introduction of device management
 - Delegate to 3GPP SA1 with responsibility for the introduction of MTC (machine type communications) related service/network requirements
- 01/2005 – 12/2008** **Vodafone Germany** **Düsseldorf, Germany**
- Project Manager Mobile Broadcast Standards
- Responsible for Mobile Broadcast standardisation across different broadcast systems/standards bodies and across all Vodafone local operations
 - Responsible for Mobile Broadcast standardisation strategy development and implementation
 - Delegation Lead for the Open Mobile Alliance (OMA) BCAST working group
 - Initiated and managed the BCAST device profile development in the BMCO Forum
 - Leading the “Service Protection” (pay-TV) stream of the German DVB-H Consortium
 - Filed several patents
 - Supporting patent litigations and patent portfolio evaluation (various technical areas)
- 04/2003 – 12/2003** **GSM Association** **London, United Kingdom**
- Member of the MMS Task Force
- Verification of the MMS operator interworking framework
 - Supporting the definition and specification of the MMS functional evolution
 - Acting as a “link” between 3GPP and GSMA in the area of MMS
- 06/1998 – 12/2004** **European Telecommunications Standards Institute (ETSI)**
Sophia Antipolis, France
- 01/2002 – 12/2004: Secretary 3GPP Technical Specifications Group “Terminals” and Terminals Working Group 2 “Terminal Services and Capabilities”

CURRICULUM VITAE

01/1999 – 12/2001: Secretary 3GPP Terminals Working Group 2 “Terminal Services and Capabilities” and GERAN 3 “Base Station Testing”

06/1998 – 03/1999: Secretary ETSI SMG4 “Data Services” and SMG8 “Base Station Testing”

- Supported the establishment of 3GPP (3rd Generation Partnership Project) as the leading standards organization for mobile telecommunications
- Project manager and secretary of TSG “Terminals” responsible for Terminal Conformance Testing, Terminal Services and Capabilities, Universal Subscriber Identity Module (USIM)
- Project manager and secretary of Terminals Working Group 2 “Terminal Services and Capabilities” that was responsible for Terminal Execution Environments, Messaging including Short Message Service (SMS), Cell Broadcast Service (CBS), Enhanced Messaging Service (EMS), Multimedia Messaging Service (MMS), Terminal Interfaces incl. AT-commands, Generic User Profile, Data Synchronization and others
- Establishment and management of the Work Plan and follow-up and report on the progress of the related work items
- Advising the chairmen and the standards groups on technical, procedural and political issues
- Editorship of various GSM and UMTS technical specifications
- Responsible for presenting the technical results of the working groups to the parent body
- Responsible for the communication with other standards bodies inside and outside 3GPP
- PR activities (articles, interviews)

12/1993 – 06/1998 Mannesmann Mobilfunk GmbH

Düsseldorf, Germany

System Engineer and Project Manager in Quality Assurance and Technical Standards

- Leadership and management of acceptance test projects in the area of GSM Base Station Controller (BSC) and GSM Base Station (BTS) hardware and software.
- Leading project teams of around 15 people
- Responsible for the clearance of releasing new software/hardware into the network
- Supported Request for Quotations, supplier evaluation and pre-selection, project manager of System Verification as a central part of the supplier selection process.
- Representation of Mannesmann Mobilfunk to the ETSI standardization group “Standardization Technical Committee SMG3 System Architecture”
- Conduction of product and hardware development quality audits
- Representative of Mannesmann Mobilfunk in A-interface interoperability testing activities
- Member of BSS product planning group which was defining operator requirements for future BSS releases
- Development of process improvements for type acceptance

CURRICULUM VITAE

III. LIST OF SUPPORTED PATENT LITIGATIONS AND VALIDITY ACTIONS

- 2025
Hannibal IP LLC v. Samsung Electronics Co. Ltd., Samsung Electronics America Inc.
Inter Partes Review matters
On behalf of Samsung
Counsel: Finnegan L.L.P.
Role: Expert witness and consulting services
- 2025
Pantech Corp. v. OnePlus Technology Co., Ltd.
Inter Partes Review matters
On behalf of OnePlus
Counsel: Bayes PLLC
Role: Expert witness and consulting services
- 2025
Pantech Corp. v. OnePlus Technology Co., Ltd.
Inter Partes Review matters
On behalf of OnePlus
Counsel: Leydig, Voit & Mayer, Ltd.
Role: Expert witness and consulting services
- 2025
Apex Beam Technologies LLC v. Apple Inc.
Inter Partes Review matters
On behalf of Apple
Counsel: Fish&Richardson P.C.
Role: Expert witness and consulting services
- 2024
Pantech Corporation v. Oppo Mobile Telecommunications Corp., Ltd.
Inter Partes Review matters
On behalf of Oppo
Counsel: Bayes PLLC
Role: Expert witness and consulting services
- 2024
Pantech Corp. et al. v. LG Electronics Inc. et al.
Civil Action No. 5:22-cv-00113-RWS-JBB (E.D.Tx.)
On behalf of LG Electronics
Counsel: Ropes & Gray LLP
Role: Expert witness and consulting services
- 2024
Ericsson v. Lenovo
Inter Partes Review matters
On behalf of Lenovo
Counsel: Kirkland & Ellis LLP
Role: Expert witness and consulting services
- 2024
Pantech Corp. et al. v. OnePlus Technology Co., Ltd.
Civil Action No. 5:22-cv-00069-RWS (E.D.Tx.)
On behalf of OnePlus
Counsel: Leydig, Voit & Mayer, Ltd.
Role: Expert witness and consulting services
- 2024
G+ Communications, LLC, v. Samsung Electronics Co., Ltd.

CURRICULUM VITAE

Civil Action No. 2:22-CV-78 (E.D.Tx.)
On behalf of Samsung
Counsel: Fish&Richardson P.C.
Role: Expert witness and consulting services

2023

Unified Patents, LLC v. Helios Streaming LLC
Inter Partes Review matters
On behalf of Unified Patents
Counsel: Akin
Role: Expert witness and consulting services

2023

Unified Patents, LLC v. SLS Manager Technologies
Inter Partes Review matters
On behalf of Unified Patents
Counsel: Unified Patents
Role: Expert witness and consulting services

2023

Headwater Research LLC v. Samsung Electronics Co., Ltd.
Inter Partes Review matters
On behalf of Samsung
Counsel: Fish&Richardson P.C.
Role: Expert witness and consulting services

2023

Pantech Corp. et al. v. LG Electronics Inc. et al.
Inter Partes Review matters
On behalf of LG Electronics
Counsel: Ropes & Gray LLP
Role: Expert witness and consulting services

2023

Apple Computer Trading (Shanghai) Co., Ltd. Apple Electronics Products Commerce (Beijing) Co., Ltd. v. Optis Cellular Technology LLC
Shenzhen, China, Intermediate People's Court
On behalf of Apple
Counsel: WilmerHale
Role: Expert witness and consulting services

2023

Huawei Technologies Co., Ltd. v. MediaTek Inc.
Inter Partes Review matters
On behalf of MediaTek
Counsel: Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P.
Role: Expert witness and consulting service

2023

Apex Beam Technologies LLC v. Samsung
Inter Partes Review matters
On behalf of Samsung
Counsel: Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P.
Role: Expert witness and consulting services

2022

Constellation Designs LLC v. LG Electronics, Inc.
Inter Partes Review matters
On behalf of LG Electronics
Counsel: Fish&Richardson P.C.
Role: Expert witness and consulting services

CURRICULUM VITAE

2022

Unified Patents, LLC v. Togail Technologies LTD.

Inter Partes Review matters

On behalf of Unified Patents

Counsel: Duane Morris LLP

Role: Expert witness and consulting services

2022

Ericsson v. Apple

Certain Mobile Telephones, Tablet Computers With Cellular Connectivity, And Smart Watches With Cellular Connectivity, Components Thereof, And Products Containing Same, Inv. No. 337-TA-1299 (U.S.I.T.C.)

On behalf of Apple

Counsel: WilmerHale

Role: Expert and consulting services

2022

Ericsson v. Apple

Civil Action No. 2:21-cv-376 (E.D.Tex.)

On behalf of Apple

Counsel: WilmerHale

Role: Expert and consulting services

2022

Intellectual Ventures II LLC v. Toyota Motor Cooperation.

Inter Partes Review matters

On behalf of Toyota

Counsel: Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P.

Role: Expert witness and consulting services

2022

Ericsson v. Apple

2nd Business Court, Rio de Janeiro, Brazil

On behalf of Apple

Counsel: WilmerHale

Role: Expert and consulting services

2022

Ericsson v. Apple

Civil Court, Bogotá, Columbia

On behalf of Apple

Counsel: WilmerHale

Role: Expert and consulting services

2022

Proven Networks LLC. v. NetApp Inc.

Inter Partes Review matters

On behalf of NetApp

Counsel: Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P., Ropes & Gray LLP

Role: Expert witness and consulting services

2022

Ericsson v. Apple

Inter Partes Review matters

On behalf of Apple

Counsel: Fish&Richardson, Erise IP

Role: Expert witness and consulting services

2021

AEGIS 11 LLC v. Hisense Company, Ltd. and Hisense USA Corporation

Inter Partes Review matters

On behalf of Hisense

CURRICULUM VITAE

Counsel: Orrik Herrington & Sutcliffe LLP
Role: Expert witness and consulting services

2021

Nokia v. Lenovo
Certain Electronic Devices, Including Computers, Tablet Computers, and Components and Modules Thereof, Inv. No. 337-TA-1208 (U.S.I.T.C.)
On behalf of Lenovo
Counsel: WilmerHale
Role: Expert witness and consulting services

2021

Optis Cellular Technology LLC et al. v. Apple
Claim No. HP-2019-000006 (High Court of Justice, Business and Property Courts of England and Wales)
On behalf of Apple
Counsel: WilmerHale
Role: Expert witness and consulting services

2021

Ericsson v. Samsung
Inter Partes Review matters
On behalf of Samsung
Counsel: Kirkland&Ellis LLP, Fish&Richardson
Role: Expert witness and consulting services

2020

Panoptis Patent Management LLC et al. v. Apple Inc.
Civil Action No. 2:19-cv-66 (E.D. Tex.)
On behalf of Apple
Counsel: WilmerHale
Role: Expert witness at bench trial

2020

Sol IP, LLC v. AT&T Mobility, LLC et al.
Civil Action No. 2:18-cv-526 (E.D. Tex.)
On behalf of AT&T, Verizon, Sprint
Counsel: Gibson Dunn
Role: Expert witness and consulting services

2020

Bell Northern Research LLC v. LG Electronics Inc. et al.
Civil Action No. 18-CV-2864-CAB-BLM (S.D. Cal.)
On behalf of LG Electronics Inc.
Counsel: Fish&Richardson
Role: Expert witness and consulting services

2019

Conversant Wireless Licensing S.a.r.l. v. LG Electronics Deutschland GmbH
Civil Action No. 7 O 3277/18 (Landgericht Munich, Germany)
On behalf of LG Electronics Deutschland GmbH
Counsel: Wildanger Kehrwald Graf von Schwerin & Partner mbB
Role: Expert witness and consulting services

2019

Bell Northern Research, LLC v. Huawei Device Co., Ltd, et al.
Civil Action No. 3:18-cv-01784-CAB-BLM
On behalf of Huawei
Counsel: Fish&Richardson
Role: Expert witness and consulting services

2019

CURRICULUM VITAE

Uniloc USA, Inc., et al. v. Samsung Electronics America, Inc. and Samsung Electronics Co. Ltd.

Civil Action Nos. 2:18-cv-00040-JRG, 2:18-cv-00041-JRG, 2:18-cv-00042-JRG and 2:18-cv-00044-JRG (United States District Court for the Eastern District of Texas)

On behalf of Samsung

Counsel: Greenberg Traurig

Role: Expert witness and consulting services

2019

Uniloc USA, Inc., et al. v. Huawei Device USA, Inc. et al.

Civil Action No. 2:18-cv- 00072-JRG-RSP (E.D. Tex.)

On behalf of Huawei

Counsel: McGuireWoods

Role: Expert witness and consulting services

2019

Microsoft Corporation v. Uniloc 2017 LLC

Inter Partes Review of U.S. Pat. No. 7,167,487

Inter Partes Review of U.S. Pat. No. 7,075,917

On behalf of Microsoft and on behalf of Apple as joinder petitioner

Counsel: Klarquist Sparkman (Microsoft), Erise IP (Apple)

Role: Expert witness and consulting services

2019

Qualcomm v. KFTC

South Korean Case, Seoul High Court

On behalf of intervenor Apple supporting the KFTC

Counsel: Boies Schiller Flexner

Role: Expert witness

2018/19

Evolved Wireless, LLC v. Apple, Inc.

Civil Action No. 1:15-cv-00542-JFB-SRF

On behalf of Apple

Counsel: DLA Piper

Role: Expert witness and consulting services

2018/19

Cisco Systems Inc. v. Traxcell Technologies

Inter Partes Review of Traxcell Technologies patents

On behalf of Cisco

Counsel: King&Spalding

Role: Expert witness and consulting services

2018/19

Qualcomm Inc. v. Apple Inc.

Civil Action No. 3:17- cv-02398-DMS-MDD (United States District Court for the Southern District of California)

Civil Action No. 3:17-cv-02402-WQH-MDD

Certain Mobile Electronic Devices and Radio Frequency and Processing Components Thereof (II), Inv. No. 337-TA-1093

Inter Partes Review of U.S. PATENT NO. 9,154,356

Cases IPR2019-00047, IPR2019-00048, IPR2019-00049, IPR2019-00128, IPR2019-00129

On behalf of Apple and Intel

Counsel: WilmerHale

Role: Expert witness and consulting services

2018/19

Apple Inc. v. Qualcomm Inc.

Civil Action No. 3:17-CV-00108-GPC-MDD (United States District Court for the Southern District of California)

On behalf of Apple

CURRICULUM VITAE

Counsel: Fish&Richardson, Boies Schiller Flexner
Role: Expert witness and consulting services

2018

3G Licensing, S.A. et al. v. LG Electronics Inc. et al
Inter Partes Review of U.S. Patent No. 7,995,091
On behalf of LG Electronics
Counsel: Fish&Richardson
Role: Expert witness

2017

Huawei Technologies Co. LTD. v. T-Mobile US, Inc. & T-Mobile USA, Inc.
E.D. Tex. Case Nos. 2:16-cv-00052-JRG-RSP; 2:16-cv-00055-JRG-RSP; 2:16-cv-00056-JRG-RSP; and 2:16-cv-00057-JRG-RSP
On behalf of T-Mobile
Counsel: Gibson Dunn
Role: Expert witness and consulting services

2016

Koninklijke KPN N.V. v. Samsung Electronics America, Inc. et al.
Civil Action No. 14-cv-1165
On behalf of Samsung Electronics
Counsel: Baker Botts
Role: Expert witness and consulting services

2016

SSH v. Sony
OLG Düsseldorf, Germany
On behalf of SSH
Counsel: Cohausz&Florack
Role: Technical expert support

2015/16

LG Electronics v. Core Wireless Licensing S.A.R.L.
Inter Partes Review of U.S. Patent No. 8,165,049
On behalf of LG Electronics
Counsel: Greenberg Traurig
Role: Expert witness

2015/16

Core Wireless Licensing S.A.R.L. v. LG Electronics Inc. and LG Electronics MobileComm U.S.A., Inc
Civil Action No. 2:14-cv-911 (lead case) and Civil Action No. 2:14-cv-912 (consolidated)
On behalf of LG Electronics
Counsel: Greenberg Traurig, Sidley Austin
Role: Expert witness

2015

Intellectual Ventures I LLC v. T-Mobile USA, Inc. & T-Mobile US, Inc.
D. Del. Case No. 1:13-cv-01632
Intellectual Ventures II LLC v. T-Mobile USA, Inc. & T-Mobile US, Inc.
D. Del. Case No. 1:13-cv-01633
On behalf of T-Mobile
Counsel: Gibson Dunn
Role: Technical expert support

IV. EDUCATION

10/1984 – 10/1993 **University of Technology Aachen**

Aachen, Germany

CURRICULUM VITAE

Graduate of Electrical Engineering with a focus on telecommunications technologies (Dipl.-Ing. TH)

10/1992 – 04/1993 University of Technology Trondheim Trondheim, Norway
Diploma Thesis "Design of a dual processor computer for digital signal processing in power electronics"

V. LANGUAGES

German, English, French

VI. PUBLICATIONS (selection)

- "Standardessentielle Patente (SEPs) für das Internet der Dinge (IoT)", PATINFO 2025 Proceedings, May 2025
- "The need for standardisation in the M2M services layer", Global Telecoms Business, February 2014
- Co-authored white paper "Lightweight M2M: Enabling device management and applications for the internet of things", Open Mobile Alliance, March 2014
- "Objects are a new way to create M2M applications", Global Telecoms Business, April 2014
- "The need for standardisation in the M2M services layer", M2M Now, July 2015
- "Objects are a new way to create M2M applications", Global Telecoms Business, April 2014
- Co-authored white paper "Lightweight M2M: Enabling device management and applications for the internet of things", Open Mobile Alliance, March 2014
- "The need for standardisation in the M2M services layer", Global Telecoms Business, February 2014
- "Unlocking the internet of things and driving the need for interoperability", Global Telecoms Business, December 2013