

## ESSENTIAL INTEROPERABILITY STANDARDS

A new international instrument is needed to address access to interoperability standards and standards-essential intellectual property, which are critical to maintaining technological advancement and promoting cost-effective solutions for consumers. Applying law and economics methodologies, Simon Brinsmead systematically explores how international and domestic law deals with these matters. This important book includes an examination of the technical and economic nature of interoperability standards; a detailed analysis of the issues arising under intellectual property and competition law; an analysis of whether liability or exclusive property rules should apply with respect to interoperability standards and SEIP; and consideration of feasible international approaches. Finally, Brinsmead includes a draft of his proposed international soft law instrument as a starting point for future discussions in the field. Of interest to lawyers, regulators and scholars, this work offers a meaningful contribution to international governance, harmonization of laws and technological advancement.

SIMON BRINSMEAD is Principal Legal Officer with the Office of International Law, Attorney-General's Department (Australia), where he practises public international law. He leads teams advising on international trade and investment law and jurisdiction, immunities and international organizations law. He is experienced in WTO and investor-state dispute settlement and the negotiation of trade and investment agreements.

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Cambridge University Press  
978-1-108-84301-0 — Essential Interoperability Standards  
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Cambridge University Press  
978-1-108-84301-0 — Essential Interoperability Standards  
Simon Brinsmead  
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STANDARDS

Interfacing Intellectual Property and Competition  
in International Economic Law

SIMON BRINSMEAD

*Office of International Law, Attorney-General's Department (Australia)*



CAMBRIDGE  
UNIVERSITY PRESS

Cambridge University Press  
 978-1-108-84301-0 — Essential Interoperability Standards  
 Simon Brinsmead  
 Frontmatter  
[More Information](#)

## CAMBRIDGE UNIVERSITY PRESS

University Printing House, Cambridge CB2 8BS, United Kingdom  
 One Liberty Plaza, 20th Floor, New York, NY 10006, USA  
 477 Williamstown Road, Port Melbourne, VIC 3207, Australia  
 314–321, 3rd Floor, Plot 3, Splendor Forum, Jasola District Centre,  
 New Delhi – 110025, India  
 103 Penang Road, #05–06/07, Visioncrest Commercial, Singapore 238467

Cambridge University Press is part of the University of Cambridge.  
 It furthers the University's mission by disseminating knowledge in the pursuit of  
 education, learning, and research at the highest international levels of excellence.

[www.cambridge.org](http://www.cambridge.org)  
 Information on this title: [www.cambridge.org/9781108843010](http://www.cambridge.org/9781108843010)  
 DOI: 10.1017/9781108913706

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First published 2021

*A catalogue record for this publication is available from the British Library.*

*Library of Congress Cataloging-in-Publication Data*

Names: Brinsmead, Simon, 1975– author.

Title: Essential interoperability standards : interfacing intellectual property and competition  
 in international economic law / Simon Brinsmead, Office of International Law,  
 Attorney-General's Department (Australia).

Description: Cambridge, United Kingdom ; New York, NY : Cambridge University Press,  
 2021. | Series: Cambridge international trade and economic law | Based on author's thesis  
 (doctoral – Universität Bern, 2018). | Includes bibliographical references and index.

Identifiers: LCCN 2021000452 (print) | LCCN 2021000453 (ebook) | ISBN 9781108843010  
 (hardback) | ISBN 9781108913706 (ebook)

Subjects: LCSH: Internetworking (Telecommunication) – Law and legislation | Intellectual  
 property. | Antitrust law.

Classification: LCC K564.C6 B75 2021 (print) | LCC K564.C6 (ebook) | DDC 346.04/8–dc23  
 LC record available at <https://lcn.loc.gov/2021000452>

LC ebook record available at <https://lcn.loc.gov/2021000453>

ISBN 978-1-108-84301-0 Hardback

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Cambridge University Press  
978-1-108-84301-0 — Essential Interoperability Standards  
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For Penny, Esther and Jay

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978-1-108-84301-0 — Essential Interoperability Standards  
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Cambridge University Press  
978-1-108-84301-0 — Essential Interoperability Standards  
Simon Brinsmead  
Frontmatter  
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## FOREWORD

Value chains and trade in components presupposes a complex legal regime of interfacing and matching different products, both in domestic law and the realm of international law. It is part of an operating system in the background which often is not easy to understand. Technological standards securing the operability and interface of products, in particular in communications and information technology, show a variety of legal qualities. They may exist *de facto*, they may emanate from agreement in domestic or international law, or they qualify as intellectual property, either patents or copyright, or *sui generis* rights, thus granting monopoly and exclusive right to companies. As other companies and competitors equally depend upon such standards essential for the purpose of interface, right owners inherently enjoy a powerful position which may foster or harm technology development and competitors, and benefit or harm consumers.

The present book, based upon a doctoral thesis submitted to the University of Bern, Switzerland, carefully and extensively addresses the legal challenges encountered in the field of standards-essential intellectual property (SEIP), and in particular of standards-essential patents (SEP). Dr Brinsmead analyses different school of thought and approaches in case law, in particular in the EU, the USA and China. He carefully studies the background in international law and domestic law, in particular competition law. While the EU and China essentially rely upon competition law and in result on the essential facility doctrine containing the abuse of a dominant position, the US approach essentially relies upon restrictions inherent to intellectual property, in particular fair use and compulsory licensing. The book expounds the relevant case law in these jurisdictions and discusses pro and cons of different approaches, taking into account the literature on law and economics. It offers a wealth of information on the timely subject, from surveys of relevant international law to detailed accounts of the case law. It includes a pertinent history of the essential facility doctrine and thus of the relationship of intellectual

property and competition law on both sides of the Atlantic. The author concludes by supporting an approach based upon inherent but limited restrictions of IP to liability and compensation, as opposed to property rights entitling full injunctions. He suggests developing an expert manual able to guide domestic courts within the framework of existing international law, in particular the TRIPs Agreement of the WTO. A very interesting draft proposal completes the work.

Dr Brinsmead was able to combine practical experience in the field and a deep academic interest in the subject. Readers, lawyers and policy-makers alike will greatly benefit from this combination and the clarity of a talented mind in understanding and further developing the operating system humming in the background of millions of transactions in cooperation and competition alike.

*Thomas Cottier*  
*March 2020*

## PREFACE

This work was drafted as a doctoral dissertation for the requirements of a Dr Iur. (PhD in Law) undertaken at the University of Bern, supervised by Professor Emeritus Thomas Cottier. The original manuscript has been revised to take account of recent developments with a view to publication. While drafting the dissertation between 2012 and 2018, I practised public international law with the Office of International Law, Attorney-General's Department in Canberra, Australia. During this time, I undertook numerous trips to Bern, to participate in doctoral seminars at the World Trade Institute and also to discuss progress with Professor Cottier and draft the dissertation. I have fond memories of the lively discussions that took place in the Silva Casa auditorium at the Institute, between Professor Cottier's many doctoral students who were undertaking their research in such a plethora of legal fields.

Between November 2017 and February 2018, I undertook a visiting fellowship with Xiamen University School of Law in Fujian Province, China. Academic staff at XMU Faculty of Law were generous with their time, and I engaged in numerous stimulating discussions and workshops there. I also made substantial progress towards the final submission draft without the competing demands of my professional work.

I must acknowledge the profound impact of Professor Cottier upon the published thesis. Many of the ideas contained within this work are his – but any remaining errors are of course mine. He was an encouraging, supportive and infinitely helpful supervisor. He brought the accumulated wisdom from his wealth of experience in supervising many previous doctoral candidates to our conversations. His grasp of the scope, breadth, structure and detail of this work have been far beyond what I could have expected from a doctoral supervisor.

I am also deeply grateful to my wife Penny and our two children Esther and Jay for help and support along the way. Doctoral research is immensely time-consuming. Their patience is greatly appreciated.

Likewise, I would like to thank my parents for their encouragement from the very outset of this project.

Thanks to many colleagues at the Australian Government with whom I held stimulating and insightful conversations about this work as it progressed. Last but not least, I must thank Finola O’Sullivan and Marianne Nield for guiding me through my introduction to the world of academic publishing.

ABBREVIATIONS

2G	Second generation
3G	Third generation
3GPP	Third Generation Partnership Project
4G	Fourth generation
5G	Fifth generation
ALAC	At-Large Community
AML	China Anti-Monopoly Law
AMPS	Advanced Mobile Phone Service
ANSI	American National Standards Institute
API	Application programming interface
ARPANET	Advanced Research Projects Network Administration
ASA	American Standards Association (predecessor to ANSI)
ASO	Address Supporting Organization
CCITT	Consultative Committee for International Telephony and Telegraphy
ccNSO	Country Code Names Supporting Organization
CD	Compact disc
CEPT	European Conference of Postal and Telecommunications Administrations
CDMA	Code Division Multiple Access
CONTU	United States Commission on the New Technological Uses of Copyrighted Works
Council for TRIPS	Council for Trade-Related Aspects of Intellectual Property Rights
CRO	Collective rights organization
CSIRO	Australia Commonwealth Scientific and Industrial Research Organization
DARPA	United States Defence Advanced Research Projects Agency
DDR-SDRAM	Double data rate synchronous dynamic random-access memory
DNS	Domain Name System
DRAM	Dynamic random-access memory
DVD	Digital versatile disc

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EC	European Commission
ECJ	European Court of Justice
ECMA (now Ecma International)	European Computer Manufacturers Association
ECPR	Efficient Component Pricing Rule
EEA	European Economic Area
EEC	European Economic Community
EPC	European Patent Convention
EU	European Union
ETSI	European Telecommunications Standards Institute
FRAND	Fair, reasonable and non-discriminatory
FTC	United States Federal Trade Commission
FTC Act	United States Federal Trade Commission Act 1914
GAC	Governmental Advisory Committee
GATT 1994	General Agreement on Tariffs and Trade 1994
GATS	General Agreement on Trade in Services
GPRS	General Packet Radio Service
GNSO	Generic Names Supporting Organization
GSM	Global System for Mobile Communication
GUI	Graphical user interface
HTTP	Hypertext Transfer Protocol
IAB	Internet Architecture Board
ICANN	Internet Corporation for Assigned Names and Numbers
ICN	International Competition Network
IEEE	Institute of Electrical and Electronics Engineers
IEEE-SA	IEEE Standards Association
IEC	International Electrotechnical Commission
IETF	Internet Engineering Task Force
IMT-2000	International Mobile Telecommunications for the Year 2000
INWG	International Packet Networking Group
IP	Intellectual property
IPR	Intellectual property right
IoT	Internet of Things
IPHC	Japan Intellectual Property High Court
IPv4	Internet Protocol version 4
IPv6	Internet Protocol version 6
ISO	International Organization for Standardization
ISOC	Internet Society
ITA Committee	Committee of Participants on the Expansion of Trade in Information Technology Products
ITR	International Telecommunication Regulations
ITU	International Telecommunication Union

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JEDEC	Joint Electron Device Engineering Council
JTC 1	Joint Technical Committee 1
Kbit/s	Kilobit per second
LAN	Local area network
LTE	Long-Term Evolution
Mbit/s	Megabit per second
MFN	Most-favoured-nation
MPEG	Moving Picture Experts Group
NATO	North Atlantic Treaty Organization
NDRC	China National Development and Reform Commission
NFC	Near-field communication
NTM	Non-tariff measure
OECD	Organization for Economic Cooperation and Development
OFDM	Orthogonal Frequency Division Multiplexing
OSI	Open Systems Interconnection
PAE	Patent assertion entity
PCT	Patent Cooperation Treaty
PLT	Patent Law Treaty
RAND	Reasonable and non-discriminatory
RFID	Radio Frequency Identification
SCPA	United States Semiconductor Chip Protection Act 1984
SDO	Standards development organization
SDRAM	Synchronous dynamic random-access memory
SEIP	Standards-essential intellectual property
SEP	Standards-essential patent
SPC	China Supreme People's Court
SPLT	Substantive Patent Law Treaty
SSO	Standard-setting organization
TBT Agreement	Agreement on Technical Barriers to Trade
TBT Committee	Committee on Technical Barriers to Trade
TCP/IP	Transmission Control Protocol/Internet Protocol
TDMA	Time Division Multiple Access
TFEU	Treaty on the Functioning of the European Union
TRIPS Agreement	Agreement on Trade-Related Aspects of Intellectual Property Rights
TSAG	Telecommunication Standardization Advisory Group
UK	United Kingdom
USA	United States of America
USITC	United States International Trade Commission
UTSA	United States Uniform Trade Secrets Act
VHS	Video Home System
W-CDMA	Wideband Code Division Multiple Access

xxiv	LIST OF ABBREVIATIONS
W3C	World Wide Web Consortium
WG	Working group
WCT	WIPO Copyright Treaty
WPPT	WIPO Performances and Phonograms Treaty
WIPO	World Intellectual Property Organization
WLAN	Wireless local area network
WTO	World Trade Organization
WTSA	World Telecommunications Standards Assembly