

# Contents

<b>1</b>	<b>Geospatial Open Source and Open Standards Convergences</b> . . . . .	1
	Athanasios Tom Kralidis	
<b>2</b>	<b>Free Software and Open Source Business Models</b> . . . . .	21
	Arnulf Christl	
<b>3</b>	<b>Communities of Practice and the Business of Open Source Web Mapping</b> . . . . .	49
	David McIhagga	
<b>4</b>	<b>MapServer</b> . . . . .	65
	Stephen Lime	
<b>5</b>	<b>The Geospatial Data Abstraction Library</b> . . . . .	87
	Frank Warmerdam	
<b>6</b>	<b>Open Source Databases and Their Spatial Extensions</b> . . . . .	105
	Rongguo Chen and Jiong Xie	
<b>7</b>	<b>MapGuide Open Source</b> . . . . .	131
	Robert Bray	
<b>8</b>	<b>GeoTools</b> . . . . .	153
	Ian Turton	
<b>9</b>	<b>GRASS GIS</b> . . . . .	171
	M. Neteler, D.E. Beaudette, P. Cavallini, L. Lami and J. Cepicky	
<b>10</b>	<b>GeoVISTA Studio: Reusability by Design</b> . . . . .	201
	Mark Gahegan, Frank Hardisty, Urška Demšar and Masa Takatsuka	

**11 Design and Implementation of a Map-Centred Synchronous Collaboration Tool Using Open Source Components: The MapChat Project** ..... 221  
G. Brent Hall and Michael G. Leahy

**12 TerraLib: An Open Source GIS Library for Large-Scale Environmental and Socio-Economic Applications** ..... 247  
Gilberto Câmara, Lúbia Vinhas, Karine Reis Ferreira,  
Gilberto Ribeiro de Queiroz, Ricardo Cartaxo Modesto de Souza,  
Antônio Miguel Vieira Monteiro, Marcelo Tílio de Carvalho,  
Marco Antonio Casanova and Ubirajara Moura de Freitas

**Index** ..... 271

**Author Biography** ..... 277