



## Subject card

Subject name and code	Service Platforms and Applications for NGN, PG_00048339						
Field of study	Electronics and Telecommunications						
Date of commencement of studies	February 2023		Academic year of realisation of subject		2022/2023		
Education level	second-cycle studies		Subject group		Optional subject group Subject group related to scientific research in the field of study		
Mode of study	Full-time studies		Mode of delivery		at the university		
Year of study	1		Language of instruction		Polish		
Semester of study	1		ECTS credits		2.0		
Learning profile	general academic profile		Assessment form		exam		
Conducting unit	Department of Teleinformation Networks -> Faculty of Electronics, Telecommunications and Informatics						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Marcin Narloch				
	Teachers		dr inż. Marcin Narloch				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	0.0	0.0	30
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	30		4.0		16.0	50
Subject objectives	Student describes realizations of service platforms for the next generation networks. Student determines correct realizations of applications fulfilling users needs in next generation networks						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_W06] Knows and understands, to an increased extent, the basic processes taking place in the life cycle of devices, facilities and technical systems.		Student knows platforms of service control and application servers for services in Next Generation Networks.		[SW1] Assessment of factual knowledge		
	[K7_W05] Knows and understands, to an increased extent, methods of process and function support, specific to the field of study.		Student knows platforms of service control and application servers for services in Next Generation Networks.		[SW1] Assessment of factual knowledge		
	[K7_W03] Knows and understands, to an increased extent, the construction and operating principles of components and systems related to the field of study, including theories, methods and complex relationships between them and selected specific issues - appropriate for the curriculum.		Student knows platforms of service control and application servers for services in Next Generation Networks.		[SW1] Assessment of factual knowledge		

Subject contents	1. The importance of service platforms in the context of NGN 2. IMS as an example of NGN service architecture 3. The role of the IMS service control layer for providing services 4. Interworking with application layer in IMS for providing services 5. Technologies of IMS application layer development 6. The role of component-oriented architectures in applications for NGN 6. Java EE environment in programming applications for NGN 7. JAIN SLEE in the context of applications for NGN 8. Service execution environment (SLEE Container) 9. JAIN SLEE components and component interfaces 10. Standard components (Event and Activity) and their role in JAIN SLEE 11. SBB (Service Building Blocks) for providing services in JAIN SLEE 12. The notion of event and event handling in JAIN SLEE 13. Communication with environment through Resource Adaptors and Resource API 14. Standard functionalities of application server 15. Application of standard Java API for service functionality extension 16. Elements of JAIN SLEE environment management (JMX) 17. Specificity of JAIN SLEE application programming 18. Analysis of JAIN SLEE application in different telecommunication areas 19. Analysis of exemplary JAIN SLEE applications 20. SIP Servlets in the context of applications for NGN 21. SIP Servlet Container 22. Application router 23. SIP Servlet API and applications developed with SIP Servlet API 24. Specificity of SIP Servlet application programming 25. Analysis of exemplary SIP Servlet applications 26. Mobicents as an example of platform for NGN application development 27. Architecture for providing Parlay/OSA services 28. Applications using Parlay/OSA API 29. Application of Parlay X Web Services 30. Specificity of Parlay/OSA application programming 31. Analysis of exemplary Parlay/OSA applications 32. Operation systems of mobile devices 33. Specificity of application programming for mobile platforms in the context of applications for NGN		
Prerequisites and co-requisites	No requirements		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Midterm colloquium	50.0%	100.0%
Recommended reading	Basic literature	Material prepared by the lecturer in the form of xeroxcopy.	
	Supplementary literature	Boulton C., Gronowski K., Understanding SIP Servlets 1.1, Artech House, 2009. Javi R., Bakker J., Anjum F., Programming converged networks: call control in Java, XML, and Parlay/OSA, Wiley-Interscience; 2003.	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	1. Characterisation of IMS architecture.  2. Characterisation of services for NGN networks based on Jain SLEE platform.  3. Characterisation of services for NGN networks based on SipServlets platform.  4. Characterisation of services for NGN networks based on Parlay/OSA concepts.  5. Future development directions of NGN services platforms.		
Work placement	Not applicable		