This volume contains the proceedings of the 29th International Conference on Testing Software and Systems, ICTSS 2017. The conference was held in St. Petersburg, Russia, during October 9–11, 2017.

The conference has a long history. In the past five years, ICTSS has been held in Graz (Austria), Dubai and Sharjah (United Arab Emirates), Madrid (Spain), Istanbul (Turkey), and Aalborg (Denmark). During the period from 2007 to 2009, the conference was held as part of the International Conference on Testing of Communicating Systems (TESTCOM) and FATES in Tallinn (Estonia), Tokyo (Japan), and Eindhoven (the Netherlands). Before that, between 2000 and 2006, TESTCOM was held in Ottawa (Canada), Berlin (Germany), Sophia Antipolis (France), Oxford (UK), Montreal (Canada), and New York City (USA). During the period from 1997 to 1999, the conference was called the International Workshop on Testing of Communicating Systems (IWTCS) and was held on Cheju Island (South Korea), in Tomsk (Russia), and in Budapest (Hungary). Between 1988 and 1996, the conference was known as the International Workshop for Protocol Test Systems (IWPTS). Nine workshops took place in Vancouver (Canada), Berlin (Germany), McLean (USA), Leidschendam (the Netherlands), Montreal (Canada), Pau (France), Tokyo (Japan), Evry (France), and Darmstadt (Germany).

The topics of this volume cover model-based testing, test derivation and monitoring, fault localization, and system testing including real-time systems. In total, 41 papers were submitted and the Program Committee selected 18 regular and 4 short papers for presentation at the conference. The accepted papers form the contents of the proceedings.

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Nina Yevtushenko
Ana Rosa Cavalli
Hüsnü Yenigün