TSG 43 Uses of technology in upper secondary mathematics education (age 14 to 19)

Co-chairs:

Colette Laborde (France) Colette.Laborde@imag.fr

Stephen Hegedus (USA) hegeduss1@southernct.edu

Team members:

Luis Moreno Armella (Mexico)

Hans-Stefan Siller (Germany)

Michal Tabach (Israel)

IPC Liaison person: George Ekol (Uganda)

The ICME 13 Topic Study Group *Uses of technology in higher secondary mathematics education (age 14 to 19)* will start with an overview of the current state of the art of uses of technology in secondary mathematics education and move to focused discussion around four core, interrelated themes with an inclusive international perspective. These include:

- Theoretical Aspects. New technologies can create new kinds of activities and new forms of interactions between learners and teachers hence the need to examine current theory for developing and analyzing the implementation of new technologies from cognitive and epistemological perspectives

- Role of Emerging Technologies. For example, how tablets, smartphones, Virtual Learning Environments, Augmented Reality environments, and haptic technologies might mediate new forms of access to mathematics

- Interrelations between technology and the mathematics taught at this age level

- Teacher Education. New challenges and opportunities for teachers to reflect on their practices and how they develop with the use of new technologies.

The international audience of the group is an opportunity to offer an international perspective about the interrelations between taught mathematics and the type of technologies available, in particular:

o How technologies can or cannot create access to a diverse population of students in terms of needs, background, and culture
o How they are used to make connections across mathematical topics

These areas of discussion and their intersections will be addressed by taking into account the mathematics involved in the use of these technologies and empirical investigations where possible.

As three TSGs are devoted to technology, the group will focus on mathematical topics that are specific to the age group (14 to 19) with respect to the integration of technology for mathematics learning and teaching but acknowledging the long-term development of knowledge across the grades.