

Technologist Corner – July 2007

The Theory of Inventive Problem Solving – From Russia with Love By David Conley

Recently I had the wonderful experience of presenting a paper at TRIZ fest 2007 held in Moscow, Russia. Being one of only four non-Russians at the conference, we foreigners were given two translators and a good luck pat on the back. My presentation was delivered in English which posed a challenge of timing the presentation animation to synchronize with the Russian language translation. However, things progressed smoothly and my conference material was well received (You can read David's conference paper by going to [VRL Search](#) and searching for **TRIZ Expert**).

Allow me to back up a bit. TRIZ is a Russian acronym for which the English translation is "The Theory of Inventive Problem Solving." The TRIZ methodology was conceptualized and developed by Genrich Altshuller and his colleagues beginning in 1946 in the former USSR and involved reviewing hundreds of thousands of patents to understand how engineering systems evolved over time. Particular attention was paid to understanding how innovation was harnessed to solve difficult engineering problems in novel ways. The development of TRIZ as an international Science of Creativity continues today and has thus far encompassed the analysis of some three million patents. Elemental to the TRIZ process is the understanding of how engineering system contradictions can be transcended, avoiding the most common solution of compromise. Resulting solutions are almost always elegant, simple and utilize readily available resources. Intel began adopting TRIZ in 2003 and has since trained hundreds of engineers across multiple business groups. The quality and level of Intel's training, combined with our contribution to the discipline, makes Intel a leading practitioner of TRIZ in the US if not world wide. The results to date are impressive with dozens of elusive problems solved and tens of millions of dollars saved. While most in the West consider TRIZ to be primarily an engineering problem solving methodology, many tools of the discipline can also be applied to business, political, and social issues. For example, one Russian consulting firm has used TRIZ to design political campaigns with the astounding results of thirty-eight wins for their candidates, compared with only two losses.

Now, back to the other side of the world. The Russian people were gracious, the food excellent and the city is steeped in Soviet era history and monuments. One such tribute depicted a 30 foot tall Atlas-like giant holding a massive replica of Sputnik over his head, representing the technical prowess of the USSR in the 1950s. However, the subway is one of the most impressive of Moscow's landmarks, built by Lenin and Stalin as an underground palace of marble and gold inlay for the citizens of Moscow. The conference was held in a kremlin (castle) which was a re-creation of Peter the Great's summer home. The structure occupies the same footprint of the original castle which was to the North of central Moscow. Culturally interesting was how most of the Russian attendees' presentations were focused on process, opposed to the Western focus on results. This practice is tied to the Eastern teaching philosophy of answering a question with yet another question. The learning is considered to be in the student's process of discovery, not in supplying them with an answer.

Another event attendee was a representative of Samsung-Korea who was interested in how Intel is utilizing TRIZ. Samsung's attraction to Intel's TRIZ program may come as a surprise to some as Samsung could be considered as leading Intel in several aspects of problem solving and continuous improvement. Samsung's interest was partially fueled by the fact that Samsung is an enthusiastic early adopter of TRIZ and also has hundreds of engineers trained in the discipline.

The last day of the five day event included a meeting of the MATRIZ Board (directors of the Russian TRIZ association) which included election of new board members. Amir Roggel, Intel's TRIZ Champion, was elected to the MATRIZ board marking the first time a non-Russian has held such a prestigious position within the MATRIZ community. My participation in the Russian TRIZ conference was a rich and rewarding experience culturally, technically and professionally. I encourage others to visit the birth place of TRIZ when pursuing this fascinating discipline.

For those interested in more, TRIZ problem solving is available to your organization in two distinct ways. The first is to engage an internal Intel TRIZ consultant to help address a particular challenge and the second is to obtain TRIZ training for the problem solvers within your own organization. You can embark on both paths by visiting TRIZ.Intel.com. For consultants click the [TRIZ Contacts](#) button and for training dates and locations click the [TRIZ Training](#) button.



David Conley (left) is a Level 3 (Expert) TRIZ practitioner employed at the New Mexico site. Intel has approximately 20 other employees certified at the Expert level by the St. Petersburg School of the International TRIZ Association.

Amir Roggel (right) is an FSM Principal Engineer and FSM's TRIZ Champion. He is based in Israel and is on temporary assignment in the FSM Office of Technology where he focuses on TRIZ utilization, innovation and engineering development.