The Bridging Research and Interoperability Collaboration (BRIC)

Frequently Asked Questions

In order to provide the reader with the best understanding of the BRIC initiative, we include the FAQ list as shown below. Should you feel the need to ask further questions, please contact Dr. Yasser Morgan at yasser.morgan@uregina.ca and your enquiry will be addressed carefully and promptly.

1. **What is the BRIC initiative?**

   BRIC initiative is part of the University of Regina's Collaborative Centre for Justice and Safety (CCJS). The BRIC represents the technology side of the CCJS and is led by Dr. Yasser Morgan from the Faculty of Engineering and Applied Sciences.

2. **What are the mission and objectives of the BRIC initiative?**

   The BRIC initiative is focused on resolving applied technology challenges relevant to public safety within the Canadian context.

3. **What are the BRIC initiative strategies to fulfill its mission and objectives?**

   The BRIC initiative includes development of technology translation activities not only to research and resolve technology challenges, but to ensure complete and effective delivery of the BRIC and BRIC related solutions to public safety agencies.

4. **What is the lifetime of the BRIC initiative?**

   The BRIC initiative is founded to stay. The activities of the BRIC have been designed to fill in a gap in public safety technology support and this area is seen to be growing rapidly. Looking at similar initiatives in the USA, they have grown and mushroomed fairly quickly, reflecting the need for technology support that is informed, impartial, open standard, and available.

5. **What is the vision for the growth of the BRIC initiative?**

    We have highlighted the BRIC vision in the expression-of-interest document. Simply, the BRIC would maintain a focus on *gluing* the wide range of technology developments happening around the globe. For instance, the BRIC is not interested in developing a new biometric or forensic analysis. Instead, the BRIC is focused on how to integrate those, and other, solutions so they work *together* and they provide realistic and applied support in complex public safety scenarios.

6. **What are the BRIC activities?**

    The following activities are expected to take place within the BRIC initiative:
    - Technology testing, evaluation, and benchmarking.
    - Test-bed development for research, evaluation, scenario examination, and hosting exercises.
    - Evaluation of public safety networks' security and integrity.
    - Research on applied public safety computing challenges.
    - Research and development on hardware interoperability challenges.
    - Developing technology solutions to chronic technology problems within the public safety domain.
    - Certified training and education.

7. **Did you look at similar efforts on the international level to benefit from their experience?**

    Yes, we are in touch with the Texas A&M University and University of Colorado to benefit from their experience and to complement their efforts particularly relevant to the Canadian demographic, population distribution, and model of governance.
    It is part of our plan to connect the BRIC development network to the Texas and Colorado networks in order to facilitate stronger connection to collaborative efforts and solution sharing.

8.   How is the BRIC funded?

We are continuously in a fund-raising mode to cover the BRIC initiatives. General Dynamics Canada has provided a seed fund of about $500,000, and we have requested $3M from Canadian Safety and Security Program (CSSP) to cover some of the development cost. The following organizations have agreed to provide in-kind support either by providing infrastructure, real estate, free consulting, or a combination:

- CANARIE – providing the backhaul for data communications across the nation.
- SRNet – providing the backhaul through Saskatchewan.
- SaskTel – accepting to host some of the communications equipment and providing technical support.
- Municipality of Cornwall – allowing the use of their real-time data.
- University of Ottawa – being partner on the research and infrastructure side.
- The EDGE Center – providing access to a wide range of technology resources and collaboration.

We are also in touch with the following organizations to seek support:

- Western Economic Diversification Canada – to provide support for the equipment.
- NSERC – to provide support on multiple fronts.

The above list presents a snapshot on the BRIC initiative funding at the time of writing. The list may change as we go and collect funding from different sources.

9.   How would the BRIC be self-sustaining?

The longer-term plan (5+ years) for the BRIC relies on service-for-fee activities. Training, education, and benchmarking, in addition to equipment testing and evaluation, would be the main source of income.

10. What projects is BRIC working on?

While for the future we envision multiple developments taking place simultaneously, for the present we focus our initial efforts on the development of Public Safety Interoperability Platform (PSIP). We anticipate the PSIP project to take 3 years of development and to start generating solutions within 2 years.

11. What are the expected outcomes of PSIP?

PSIP develops a platform for hardware interoperability. Allowing Small and Medium Enterprises (SME) to provide portable applications that can be used on different hardware.

12. What would be the impact of PSIP?

The impact of PSIP can be realized on many fronts:

- PSIP enables the Canadian SMEs to adjust their equipment to a known benchmark, which enables equipment exportation with the support of an interoperable platform.
- PSIP is structured to position SMEs to develop the desired types of Machine to Machine (M2M) sensors to address the various trigger points and associated actions processes based upon local and regional needs.
- Knowledge created by PSIP is directed to develop intellectual property, and hence create new enterprise along with the development of human resources.
- Yearly competitions and exercises in various public safety categories enable SMEs to show off their efforts and empowers collaboration.

The true value is not limited to a particular solution. Rather, to developing the platforms that enable the inter-development of solutions through SMEs and to developing the collaboration community along the way to allow re-embedding of intellectual properties into SME solutions. This framework builds hierarchy of solution blocks over other blocks which strengthen the Canadian SMEs' competitive position in the national and international arenas.

13.   **What is the total budget for PSIP?**

The creation of the PSIP network infrastructure networking equipment is expected to be $1.2M, including computing devices. That infrastructure is reusable for many projects and many years to come after the PSIP. Software and test-bed development is expected to cost another $1.2M. Then we expect human resources and cost of HQP training to be $300,000. In addition to these, $500,000 in licensing fees, $200,000 in overheads, and $100,000 in legal and potential patenting are anticipated.

We anticipate the PSIP project to reach a total of $3.5M in cost. We have secured approximately $500,000 from industry, and have applied for $1.3M from CSSP. We are applying for equipment support of $1.2M from Western Development, and also a typical matching program from NSERC for $500,000.

14.   **What is the timeline for PSIP implementation?**

The PSIP architecture takes advantage of available management tools leveraged by integrated development. The proposed PSIP architecture lowers the development cost significantly and accelerates our route to platform development. The PSIP project plan shows a total development time of 3 years. The project plan includes milestones every 3 months and early outcomes will be realized within 2 years. The benchmarking element will generate outcome within 1 year.

15.   **What are the risks involved in PSIP development?**

Since the PSIP development is incremental in nature, anticipated risk is limited to interoperability of some devices, but does not preclude the success on other devices. Hence, the outcome of the PSIP platform is identified as a percentage of interoperable devices. The success of PSIP is measured by the percentage of interoperable devices.

16. **Who is involved and responsible for the BRIC initiative?**

The University of Regina's Collaborative Centre for Justice and Safety (CCJS) brings together researchers focused on public safety from all disciplines within the University, as well as outside organizations including health, governance, education, psychology, kinesiology, technology, and transition. The BRIC falls under the CCJS, which is constituted as a Type 1 Research Institute at the UofR. Internal governance of the BRIC is subject to well-established and well-documented academic and administrative policies.

The collaboration with CATA, CITIG, the Province of Saskatchewan, the Saskatchewan Interoperability Interest Group (SIIG), SaskTel, and SaskPower, together with international partners, brings a breadth of expertise to develop and evaluate technologies focused on Canadian requirements.

The Saskatchewan Public Safety Radio Network is an interoperable P25 network that will serve as an example and will bring additional use cases and transition models to focus the initial efforts on PSIP. The linkage to FRESH will enable the implementation of a repeatable quality process in the evaluations.

The BRIC initiative is led by Dr. Yasser Morgan, who has conducted many industrial and academic research projects, in particular on networks (Director Siemens Telecommunications Canada), standards development (IEEE 802.11p), and others.