

Position Description Form (PDF)

College: **Sir Sandford Fleming**

Incumbent's Name: **Vacant**

Position Title: **Research Engineer – Embedded Systems – CAMIIT** Payband: **I**

Position Code/Number (if applicable): S00703

Scheduled No. of Hours: **37.5** per week

Appointment Type: ☒ 12 months ☐ Less than 12 months (please specify # months: _____)

Supervisor's Name and Title: **Marc Patenaude**

Completed by: **Mary Lou McLean**

Date: March 30, 2022

Signatures:

Incumbent:

Date:

(Indicates the incumbent has read and understood the PDF)

Supervisor:

Date:

Instructions for Completing the PDF

1. Read the form carefully before completing any of the sections.
2. Answer each section as completely as you can based on the typical activities or requirements of the position and not on exceptional or rare requirements.
3. If you have any questions, refer to the document entitled "A Guide on How to Write Support Staff Position Description Forms" or contact your Human Resources representation for clarification.
4. Ensure the PDF is legible.
5. Responses should be **straightforward and concise using simple factual statements**.

Position Summary

Provide a concise description of the overall purpose of the position.

The Research Engineer – Embedded Systems plays a key role in applied research projects at the Centre for Advancement of Mechatronics & Industrial Internet of Things (CAMIIT).

This position will be responsible for the development of electronics and embedded systems for mechatronics and internet of things applications, including but not limited to hardware design, firmware design, laboratory and field testing, and prototype development at the CAMIIT. In collaboration with the lead Research Scientist, the incumbent will support project requirements according to project plans, including engineering design and development, preparing engineering documents, data analysis, performing lab tests and site tests, writing reports and providing the lead Research Scientist and VP, Applied Research & Innovation with regular updates. The incumbent will also be involved in business development and establishing new research collaboration with future industrial partners. As well, the Research Engineer – Embedded Systems will play a key role in the execution of the research projects, working directly with other CAMIIT staff including Research Technologists, Research Scientists and Research Assistants.

Duties and Responsibilities

Indicate as clearly as possible the significant duties and responsibilities associated with the position. Indicate the approximate percentage of time for each duty. Describe duties rather than detailed work routines.

	Approximate % of time annually*
1. Project work <ul style="list-style-type: none"> • Conduct applied research tasks per the project plan in collaboration with CAMIIT lead Research Scientist • Develop embedded systems including hardware selection, firmware development, PCB design, etc. • Work on design improvement and optimization • Work with rapid prototyping equipment, PCB printers and 3D printers 	50%
2. Field Test and Experimentation <ul style="list-style-type: none"> • Define experiments according to the project requirements • Execute experiments both in-lab and on-site • Data acquisition and analyzing data • Preparing reports 	15%
3. Applied Research Business Development <ul style="list-style-type: none"> • Conduct literature review • Develop new research proposals and plans • Assist with establishing new partnership with industrial/academic collaborators 	10%
4. Procedural Documentation and Report Generation <ul style="list-style-type: none"> • Write knowledge base documents • Prepare presentation materials • Writing scientific papers and reports for publication purposes • Provide documentation to support ongoing corporate initiatives 	10%
5. Supervision/Training <ul style="list-style-type: none"> • Monitor project progress as defined in the project plan • Participate in project meetings and provide feedback and inputs on project progress • Participate in required training 	10%
6. Other related duties as assigned	5%

* To help you estimate approximate percentages:

½ hour a day is 7%

1 hour a day is 14%

1 hour a week is 3%

½ day a week is 10%

½ day a month is 2%

1 day a month is 4%

1 week a year is 2%

1. Education

A. Check the box that best describes the **minimum** level of **formal** education that is required for the position and specify the field(s) of study. Do not include on-the-job training in this information.

- | | | |
|--|--|--|
| <input type="checkbox"/> Up to High School | <input type="checkbox"/> 1 year certificate | <input type="checkbox"/> 2 year diploma |
| <input type="checkbox"/> Trade certification | <input type="checkbox"/> 3 year diploma / degree | <input checked="" type="checkbox"/> 4 year degree or 3 year diploma / degree plus professional certification |
| <input type="checkbox"/> Post graduate degree (e.g. Masters) or 4 years degree plus professional certification | | |
| <input type="checkbox"/> Doctoral degree | | |

Field(s) of Study:

Electrical Engineering, Mechatronics

B. Check the box that best describes the requirement for specific course(s), certification, qualification, formal training or accreditation in addition to and not part of the education level noted above and in the space provided specify the additional requirement(s). Include only the requirement that would typically be included in the job posting and would be acquired prior to the commencement of the position. Do not include courses that are needed to maintain a professional designation.

- | | |
|---|--|
| <input checked="" type="checkbox"/> No additional requirements | |
| <input type="checkbox"/> Additional requirements obtained by course(s) of a total of 100 hours or less | |
| <input type="checkbox"/> Additional requirements obtained by course(s) of a total between 101 and 520 hours | |
| <input type="checkbox"/> Additional requirements obtained by course(s) of a total of more than 520 hours | |

2. Experience

Experience refers to the minimum time required in prior position(s) to understand how to apply the techniques, methods and practices necessary to perform this job. This experience may be less than experience possessed by the incumbent, as it refers only to the minimum level required on the first day of work.

Check the box that best captures the typical number of years of experience, in addition to the necessary education level, required to perform the responsibilities of the position and, in the space provided, describe the type of experience. Include any experience that is part of a certification process, but only if the work experience or on-the-job training occurs after the conclusion of the educational course or program.

- ☐ Less than one (1) year
- ☐ Minimum of one (1) year
- ☐ Minimum of two (2) years
- ☐ Minimum of three (3) years

X Minimum of five (5) years

A minimum of 5 years of work/research experience in embedded system design or similarly inclined role including the following is required:

- Experience in the development of mechatronics and electromechanical prototypes and products
- Strong background in working with mechatronics systems (servo motor, microcontroller, industrial sensors, industrial communication and electrical wiring)
- Skills in programming and troubleshooting of microcontrollers and embedded control systems
- Experience in troubleshooting techniques and advanced understanding of mechanical and electrical equipment
- Experience in PCB design, soldering and circuit assembly
- Good communication, interpersonal and collaborative relationship building skills
- Superior analytical and problem-solving skills
- Must be able to maintain confidentiality and demonstrate tact and diplomacy at all times.
- Ability to understand advanced technical concepts
- Excellent communication skills for coordinating across multidisciplinary teams
- Ability to work independently and as a team player (with multiple teams) with a commitment to provide customer-service
- Ability to work within a fast-paced business environment featuring critical deadlines, multiple projects and competing priorities

□ Minimum of eight (8) years

3. Analysis and Problem Solving

This section relates to the application of analysis and judgement within the scope of the position.

The following charts help to define the level of complexity involved in the analysis or identification of situations, information or problems, the steps taken to develop options, solutions or other actions and the judgement required to do so.

Please provide up to three (3) examples of analysis and problem solving that are regular and recurring and, if present in the position, up to two (2) examples that occur occasionally:

#1 regular & recurring	
Key issue or problem encountered.	An advanced research project is initiated which requires planning, design, and development. Due to the novelty of the research project, it is likely that the proposed approach may require additional re-configuration and improvement during the execution and depending on the availability of the technology and equipment.
How is it identified?	In consultation with the lead Research Scientist, the incumbent must engage in a literature review, technology assessment and concept development process to identify a list of proper solutions.
Is further investigation required to define the situation and/or problem? If so, describe.	Further investigation is required once proper solution is selected and integration of the new features and information is required. The incumbent will work with the lead Research Scientist, using analytical tools to investigate and analyze the necessary changes and modifications.
Explain the analysis used to determine a solution(s) for the situation and/or problem.	The performance and reliability of the selected solution will be examined and evaluated using prototyping methods. Efforts will be taken to enhance and optimize the solution. This may include optimizing and adjusting the technology used and structure of the embedded system to obtain desirable outcome.
What sources are available to assist the incumbent finding solution(s)? (eg. past practices established standards or guidelines).	The analysis frequently involves literature review of related research works, reviewing industry-wide adopted standards, consulting with the subject matter experts as well as using in-house knowledge base articles.

3. Analysis and Problem Solving

#2 regular & recurring

Key issue or problem encountered	Evaluating, structuring, and prioritizing tasks and proposed research projects so that they are completed in line with respective deadlines and allocated resources.
How is it identified?	Research and development projects are very complex. Projects require careful definition. Working with the lead Research Scientist, the incumbent must review the research question and determine the best way to address it in a way that is timely and efficient and resolves the presenting research challenge.
Is further investigation required to define the situation and/or problem? If so, describe.	The incumbent must use proper tools and investigation to define the scope of work and methodology by creating clear and testable solutions. Judgment must be used to define the problems in ways that both meets the needs of partners and aligns with the resources and expertise available at CAMIIT. After the project is completed, the incumbent must provide insight and recommendations based on the analysis and conclusion of the project. This requires expressing scientific information in a way that is useful and practical.
Explain the analysis used to determine a solution(s) for the situation and/or problem.	If the proposed solution appears to be feasible, the incumbent will prepare a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis and for further investigation.
What sources are available to assist the incumbent finding solution(s)? (eg. past practices established standards or guidelines).	The incumbent may use various sources of information including literature, best practice, consultation with experts and applicable standards to seek proper solution and approach to address the research problem.

#3 regular & recurring

Key issue or problem encountered	
How is it identified?	
Is further investigation required to define the situation and/or problem? If so, describe.	
Explain the analysis used to determine a solution(s) for the situation and/or problem.	

What sources are available to assist the incumbent finding solution(s)? (eg. past practices established standards or guidelines).

3. Analysis and Problem Solving

#1 occasional

Key issue or problem encountered

How is it identified?

Is further investigation required to define the situation and/or problem? If so, describe.

Explain the analysis used to determine a solution(s) for the situation and/or problem.

What sources are available to assist the incumbent finding solution(s)? (eg. past practices established standards or guidelines).

#2 occasional

Key issue or problem encountered

How is it identified?

Is further investigation required to define the situation and/or problem? If so, describe.

Explain the analysis used to determine a solution(s) for the situation and/or problem.

What sources are available to assist the incumbent finding solution(s)? (eg. past practices established standards or guidelines).

4. Planning/Coordinating

Planning is a proactive activity as the incumbent must develop in advance a method of acting or proceeding, while coordinating can be more reactive in nature.

Using the following charts, provide up to three (3) examples of planning and/or coordinating that are regular and recurring and, if present in the position, up to two (2) examples that occur occasionally:

#1 regular & recurring	
List the project and the role of the incumbent in this activity.	According to the project plan, the incumbent is required to perform, monitor and report planned tasks and deliver the project's deliverable to ensure that assigned tasks and projects are on track and executed in a timely fashion.
What are the organizational and/or project management skills needed to bring together and integrate this activity?	The incumbent should demonstrate excellent organizational, communication and interpersonal skills. Knowledge of project management skills is required. Each project has a slightly different team of contributors. The incumbent will assist with scoping the project, communicating the scope and plan to other team members and managing the exceptions. Progress is tracked using a project management software and communicated back to colleagues and partners. The incumbent must be cognizant of the deadlines established in the research plan so that deadlines are met, and tasks must be prioritized accordingly.
List the types of resources required to complete this task, project or activity.	In consultation with the lead Research Scientist, the incumbent would use product documentation and module documentation to assist with developing the project plan. The incumbent would use existing organizational structures and client meetings to ensure that the priorities continue to be represented.
How is/are deadline(s) determined?	Deadlines are established in conjunction with the industry partner and the lead Research Scientist. When drafting a project plan, the scheduling must consider the influencing operational and external activities taking place in the CAMIIT facility. Ultimately deadlines are negotiated directly with the industry partners. The incumbent does not assign deadlines to individuals.

Who determines if changes to the project or activity are required? And who determines whether these changes have an impact on others? Please provide concrete examples.

Minor project plan changes (less than two weeks) can proceed with the approval of the lead Research Scientist. Major project plan changes will be decided by the lead Research Scientist in consultation with the industry partner. It may be required to change the priorities and deadlines given certain circumstances dictated by the partner's priorities and needs.

4. Planning/Coordinating

#2 regular & recurring

List the project and the role of the incumbent in this activity.

The incumbent participates in various projects and research initiatives such as firmware development, PCB design, test and analysis etc. The incumbent is expected to monitor their own project progress, resolve issues as needed and collaborate with the project team to meet project objectives.

What are the organizational and/or project management skills needed to bring together and integrate this activity?

Organizational skills, report writing, problem solving, and communication skills are required to execute the tasks. The incumbent must have the ability to work both independently and as a team contributor. The incumbent must have the ability to produce detailed technical reports and project documentation as required.

List the types of resources required to complete this task, project or activity.

The incumbent collects, consolidates, analyzes various technologies needed for the solution, and communicates with the technology provider to seek advice, clarification and details required for implementing the technology and required time. The incumbent will use product documentation, module documentation and project management tools to assist in modifying the project plan.

How is/are deadline(s) determined?

Execution of various research projects is often influenced by the industry partner and the final due date is enforced by external funding agencies. The respective milestones and deadlines are established by the lead Research Scientist in consultation with the industry partner. The incumbent would assist in scheduling their own tasks working backward from the specified due dates in coordination with the client team.

Who determines if changes to the project or activity are required? And who determines whether these changes have an impact on others? Please provide concrete examples.

Deployment project plan changes are often required by the lead Research Scientist or industry partner given the circumstances, interim goals and objectives. The scope of the project plan change will determine how and if the change is completed as part of the initial project or deferred to a revisit (or phase II) of the project. The incumbent would determine the scope, and therefore determines who needs to be consulted in process change requests. If the incumbent can incorporate a change request into a project plan without risking a deadline, they can apply the change with the approval of the lead Research Scientist. Change requests that may impact deadlines or deliverables must be reviewed by Change Control Board of CAMIIT.

#3 regular & recurring

List the project and the role of the incumbent in this activity.

What are the organizational and/or project management skills needed to bring together and integrate this activity?

List the types of resources required to complete this task, project or activity.

How is/are deadline(s) determined?

Who determines if changes to the project or activity are required? And who determines whether these changes have an impact on others? Please provide concrete examples.

4. Planning/Coordinating

#1 occasional	
List the project and the role of the incumbent in this activity.	In consultation with the Research Scientist, the incumbent will be responsible for planning and coordinating research work that takes place in the field, at the partner locations. This will involve planning all logistics, including travel, accommodations, vehicle rental, staffing, equipment and supplies needed.
What are the organizational and/or project management skills needed to bring together and integrate this activity?	The incumbent will need to be able to proactively evaluate the amount of resources required for the field work in terms of time, people, equipment and supplies and plan well ahead of the trip to ensure nothing is missed. The ability to proactively schedule and order what is needed for the trip and to ensure the safe transportation of people and supplies is essential.
List the types of resources required to complete this task, project or activity.	Project plans, websites, vendor supply lists and Excel
How is/are deadline(s) determined?	Determined by the deliverables set out in the project plan
Who determines if changes to the project or activity are required? And who determines whether these changes have an impact on others? Please provide concrete examples.	This is determined by the incumbent in collaboration with the lead Research Scientist and the industry partner.

#2 occasional	
List the project and the role of the incumbent in this activity.	Responsible for inventory control in the CAMIIT .
What are the organizational and/or project management skills needed to bring together and integrate this activity?	The incumbent will need to be able to proactively evaluate and monitor the amount of supplies required for current research and be able to forecast for coming projects. The incumbent will need to work with other CAMIIT staff to collaborate on purchasing and stocking of supplies.
List the types of resources required to complete this task, project or activity.	Inventory control spreadsheets will be used as a resource and will be used to keep inventory up to date. As well, the incumbent will access supplier websites for pricing.
How is/are deadline(s) determined?	For projects, deadlines are determined in collaboration with the lead Research Scientist and other CAMIIT staff. Other deadlines for orders can be determined based on the urgency to meet research requirements.

Who determines if changes to the project or activity are required? And who determines whether these changes have an impact on others? Please provide concrete examples.

If supplies are not available, the incumbent would discuss this with the lead Research Scientist as soon as possible. Together they will evaluate options and determine if it will have an effect on project outcomes.

5. Guiding/Advising Others

This section describes the **assigned responsibility** of the position to guide or advise others (e.g. other employees, students). Focus on the actions taken (rather than the communication skills) that directly assist others in the performance of their work or skill development.

Though Support Staff cannot formally "supervise" others, there may be a requirement to guide others using the incumbent's job expertise. This is beyond being helpful and providing ad hoc advice. It must be an assigned responsibility and must assist or enable others to be able to complete their own tasks.

Check the box(es) that best describe the level of responsibility assigned to the position and provide an example(s) to support the selection, including the positions that the incumbent guides or advises.

Regular & Recurring	Occasional	Level	Example
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Minimal requirement to guide/advise others. The incumbent may be required to explain procedures to other employees or students.	Provides clarification regarding research process and methodologies to students, or other research team members. Explaining research plans and the scope of work to other team members and reviewing and evaluating interim research findings with the team members.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	There is a need for the incumbent to demonstrate correct processes/procedures to others so that they can complete specific tasks.	The incumbent is required to explain and demonstrate a course of action for the purpose of performing research and development activities. Also coordinates the efforts of the functional work group, monitoring tasks and ensuring the project stays on schedule.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	The incumbent recommends a course of action or makes decisions so that others can perform their day-to-day activities	Coordinates the efforts of project team members (Research Assistants), monitoring tasks and ensuring the project stays on schedule. Utilizes expertise to assist other staff by designing procedures, protocols and methods and recommend the best course of action for others.
<input type="checkbox"/>	<input type="checkbox"/>	The incumbent is an active participant and has ongoing involvement in the progress of others with whom he/she has the responsibility to demonstrate correct processes/procedures or provide direction.	

☐

☐

The incumbent is responsible for allocating tasks to others and recommending a course of action or making necessary decisions to ensure the tasks are completed.



6. Independence of Action

Please illustrate the type of independence or autonomy exercised in the position. Consideration is to be given to the degree of freedom and constraints that define the parameters in which the incumbent works.

What are the instructions that are typically required or provided at the beginning of a work assignment?	
Regular and Recurring	Occasional (if none, please strike out this section)
Only specific goals & objectives and expected outcomes are communicated. Timelines established in keeping with key system processes and initiatives and as required to meet the deadlines established.	Adjustments of techniques, adaptation of processes and the refinement of methods

What rules, procedures, past practices or guidelines are available to guide the incumbent?	
Regular and Recurring	Occasional (if none, please strike out this section)
Past best practices, historical data, CAMIIT staff, relevant policies & procedures, general systems and business knowledge, Collective Agreements, Scheduling Rules & Guidelines, Academic Schedule, Annual Planning Cycle, Industry trends and standards, technical manuals and articles, project management methodology	Lead Research Scientist would provide minimal guidance in multi-departmental projects

How is work reviewed or verified (eg. Feedback from others, work processes, Supervisor)?	
Regular and Recurring	Occasional (if none, please strike out this section)
Feedback from V-P, Applied Research & Innovation, lead Research Scientist, industry partners and other CAMIIT staff	

6. Independence of Action

Describe the type of decisions the incumbent will make in consultation with someone else other than the Supervisor?	
Regular and Recurring	Occasional (if none, please strike out this section)
<ul style="list-style-type: none"> • Selecting the equipment and technologies needed for the project work. • Maintenance of the CAMIIT equipment and facilities which do not require ordering supplies. • Requiring decisions and extensive consultation with other supply companies, and outside labs. Other examples include consulting Fleming personnel in other departments concerning routine operational matters and making appropriate decisions (e.g. making decisions as needed for IT needs or requesting something from facilities, etc.) 	

Describe the type of decisions that would be decided in consultation with the Supervisor.	
Regular and Recurring	Occasional (if none, please strike out this section)
<ul style="list-style-type: none"> • Permission to access funds for items not specifically part of the approved budget (e.g. major repairs or purchase of capital equipment). • Purchasing equipment and supplies for CAMIIT lab and projects. • All health and safety as well as security issues requiring managerial attention or intervention. 	Situations where the incumbent feels faculty or student demands may infringe on policies or rules of College.

Describe the type of decisions that would be decided by the incumbent.	
Regular and Recurring	Occasional (if none, please strike out this section)

<ul style="list-style-type: none">• Leading and supervising research assistants• CAMIIT daily operations and scheduling• Training student workers• Research methodologies and adapt existing instrumentation to perform required analysis.• Finding efficiencies in routine CAMIIT operations.• Implementing installation and decommissioning of projects (technologies, experiments)	<ul style="list-style-type: none">• Assigning CAMIIT resources to the project
--	---

7. Service Delivery

This section looks at the service relationship that is an assigned requirement of the position. It considers the required manner in which the position delivers service to customers. It is not intended to examine the incumbent's interpersonal relationship with those customers and the normal anticipation of what customers want and then supplying it efficiently. It considers how the request for service is received and the degree to which the position is required to design and fulfil the service requirement. A "customer" is defined in the broadest sense as a person or groups of people and can be internal or external to the College.

In the table below, list the key service(s) and its associated customers. Describe how the request for service is received by the incumbent, how the service is carried out and the frequency.

Information on the service		Customer	Frequency (D, W, M, I)*
How is it received?	How is it carried out?		
Conducting tours, demonstrating related CAMIIT activities during tours, demonstrating technologies and equipment	Personal contact, tours	Students, faculty, general public, industry partners, funders.	I
New experiment/protocol required	Develop a new experiment/protocol to meet customer needs	Industry partners	M
To install / decommission a new technology or piece of equipment	Develop and research existing installations to gather information necessary for the planning and implementation of designs	CAMIIT staff, industry partners.	M
To provide research data	Follow quality control (assurance) measures to ensure repeatability and data integrity, including recording and summarizing data, performing basic statistics and writing data reports.	CAMIIT staff and industry partners	D

* D = Daily W = Weekly M = Monthly I = Infrequently

8. Communication

In the table below indicate the type of communication skills required to deal effectively with others. Be sure to list both verbal (e.g. exchanging information, formal presentations) and written (e.g. initiate memos, reports, proposals) in the section(s) that best describes the method of communication.

Communication Skill/Method	Example	Audience	Frequency (D, W, M, I)*
Exchanging routine information, extending common courtesy	Inquiries and correspondence related to industry partners resources and data.	CAMIIT staff and industry partners	D
	Networking at conferences or with product user-groups.		I
Explanation and interpretation of information or ideas	Sharing information, offering solutions, guidance, follow up and collaboration on projects	Industry partners, CAMIIT staff and students	W
	Application data exchange, liaison, reporting techniques, and solution sharing	CAMITT staff and industry partners	M

Imparting technical information and advice	Discussions regarding specific functionality of the system. Discussions with end-users on possible changes to the system, procedural use of the system, and/or system troubleshooting	CAMIIT staff and students, ITS; Technical and Business Analysts; end-users	D
	Discussions regarding problems with systems or possible changes to systems, how to use systems and troubleshooting.	CAMIIT staff and students, ITS; Technical and Business Analysts; end-users	W
	Support/Problem resolution and services. Imparting functional or procedural clarifications or facilitating informal learning opportunities.	CAMIIT staff and students, ITS; Technical and Business Analysts; end-users	W
	Software needs and requirements support/problem resolution and services	CAMIIT staff and students, ITS; Technical and Business Analysts; end-users	W
	Explaining research plans and methodologies and providing instruction on how to conduct the required tasks.	Students, interns and new employees	M
Instructing or training			
Obtaining cooperation or consent			
Negotiating			

* D = Daily W = Weekly M = Monthly I = Infrequently

9. Physical Effort

In the tables below, describe the type of physical activity that is required on a regular basis. Please indicate the activity as well as the frequency, the average duration of each activity and whether there is the ability to reduce any strain by changing positions or performing another activity. Activities to be considered are sitting, standing, walking, climbing, crouching, lifting and/or carrying light, medium or heavy objects, pushing, pulling, working in an awkward position or maintaining one position for a long period.

Physical Activity	Frequency (D, W, M, I)*	Duration			Ability to reduce strain		
		< 1 hr at a time	1 - 2 hrs at a time	> 2 hrs at a time	Yes	No	N/A
Sitting at a desk/computer	D		x		X		
Walking, Standing	D	X			X		
Light lifting	I	X			X		
Medium lifting	W	X				X	

* D = Daily W = Weekly M = Monthly I = Infrequently

If lifting is required, please indicate the weights below and provide examples.

X Light (up to 5 kg or 11 lbs)

X Medium (between 5 to 20 kg or 11 to 44 lbs)

☐ Heavy (over 20 kg or 44 lbs)

Manuals, printouts, equipment
Equipment, Tools

10. Audio Visual Effort

Describe the degree of attention or focus required to perform tasks taking into consideration:

- the audio/visual effort and the focus or concentration needed to perform a task and the duration of the task, including breaks (eg. up to 2 hours at one time including scheduled breaks)
- impact on attention or focus due to changes to deadlines or priorities
- the need for the incumbent to switch attention between tasks (eg. multi-tasking where each task requires focus or concentration)
- whether the level of concentration can be maintained throughout the task or is broken due to the number of disruptions

Provide up to three (3) examples of activities that require a higher than usual need for focus and concentration.

Activity #1	Frequency (D, W, M, I)*	Average Duration		
		Short < 30 mins	Long up to 2 hrs	Extended > 2 hrs
Analysis and evaluation of sensitive data and drawing insight and conclusion from model development processes	D		X	
Can concentration or focus be maintained throughout the duration of the activity? If not, why? X Usually <input type="checkbox"/> No				

Activity #2	Frequency (D, W, M, I)*	Average Duration		
		Short < 30 mins	Long up to 2 hrs	Extended > 2 hrs
Firmware development and algorithm design	D			X
Can concentration or focus be maintained throughout the duration of the activity? If not, why? X Usually <input type="checkbox"/> No				

Activity #3	Frequency (D, W, M, I)*	Average Duration		
		Short < 30 mins	Long up to 2 hrs	Extended > 2 hrs
Writing reports, research plans and proposals	W		X	
Can concentration or focus be maintained throughout the duration of the activity? If not, why? x Usually <input type="checkbox"/> No				

* D = Daily W = Weekly M = Monthly I = Infrequently

11. Working Environment

Please check the appropriate box(es) that best describes the work environment and the corresponding frequency and provide an example of the condition.

Working Conditions	Examples	Frequency (D, W, M, I)*
X acceptable working conditions (minimal exposure to the conditions listed below)	Office environment, CAMIIT lab, remote office	D
<input type="checkbox"/> accessing crawl spaces/confined spaces		
<input type="checkbox"/> dealing with abusive people		
<input type="checkbox"/> dealing with abusive people who pose a threat of physical harm		
<input type="checkbox"/> difficult weather conditions		
<input type="checkbox"/> exposure to extreme weather conditions		
X exposure to very high or low temperatures (e.g. freezers)	On-site testing during winter	I
<input type="checkbox"/> handling hazardous substances		
<input type="checkbox"/> smelly, dirty or noisy environment		
X travel	Travel to partner's location	I
<input type="checkbox"/> working in isolated or crowded situations		
<input type="checkbox"/> other (explain)		

* D = Daily M = Monthly W = Weekly I = Infrequently