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| **SOEN 6481**  **Software Systems Requirements Specification**  **Summer 2015**  Deliverable 1  (STM - TVM)  Team - D  Babak Boroujerdi Far  Dharani Kumar Palani  Dhruv Ohri  Naresh Kumar  Shu Liu  Xiaodong Li  Yang Liu |



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# A Brief Description of STM TVM

A Ticket Vending Machine is a stationary human interaction system installed at locations to provide specific set of services to users. A Ticket Vending Machine helps in buying tickets/travel pass for a mode of transportation, also assists in management of queues & priority of service in financial institutions, universities, insurance offices and any customer helpdesks of organisations. It saves the time, money and effort when compared to using human resources to provide the same services as above. It is highly available (99.99%) except for the preventive maintenance or power outages.

We have taken STM in our project which is widely used in Montreal, Quebec, Canada. It serves the mobility needs of residents and visitors by offering an efficient public metro system. STM not only provides 1-trip pass, round-trip pass, evening passes, weekly, monthly pass and many others to customers depending on the requirements. Customers can choose the pass and pay by cash, credit card or debit card.

STM takes into consideration both the National and the Provincial Languages for its service i.e. English and French. STM allows the customer to give the option of charging their OPUS Card or to buy a pass. If the customer holds an OPUS Card, he/she can reuse it by making payment for the pass. This card can be recharged once a month or once in 4 months for its use. For the visitor or the citizens who does not have opus card, they can buy a printed pass. He/she can pay for more than one pass by selecting the number of passes. After the user makes payment and the bank verifies it, the user gets to collect the printed pass(s). However the paper printed tickets have time limitation. It must be used in one week. After that the tickets are invalid.

In every metro station, there is at least one Ticket Vending Machine. To protect the benefit of the customer, it has a very strong security and network stability. By cooperating with the bank, it prevents malicious user from using other users’ information. STM builds a stable network to make sure that thousands of users can use the system and rely on its service.

# Context of Use Model for STM

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| **Type of Factor** | **Details** |
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| 1. **User**    1. *Age*    2. *Knowledge*    3. *Skills*    4. *Experiences*    5. *Mental/Physical Attributes*    6. *Attention* | 5+  Basic knowledge about STM  User should know how to interact with a GUI and can read English or French  It would be helpful for the user if he/she has interacted with a similar kind of transportation  User should be mentally present and stable to interact the STM. The user who is even on wheelchair or whether he/she is blind can still operate STM  Complete |
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| 1. **User Role**    1. *Registered*    2. *Non-Registered*    3. *Administrator* | Registered User can a STM Opus Charged Card to travel from one place to another without having to buy a ticket  Non-Registered User can also use the STM by buying the ticket from the STM TVM and then can travel. He has many options of selecting different kinds of passes depending on his priority.  Administrator can include network engineers who make sure it is 24/7 available and connected to the network, security engineers to make sure the security of the STM and the maintenance team for maintaining the STM TVM |
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| 1. **User Task**    1. *Task-Specific Goal*    2. *Critically of Task*    3. *Frequency of Use*    4. *Dependency on Use*    5. *Duration of Use* | To complete the transaction for which the user is using the TVM like printing the ticket, printing the receipt  High importance because the user has to catch up with the transport to reach the destination in time  Users can buy the tickets as many times as he want, he/she is not restricted on the number of use per day  TVM should be connected with constant power supply and the TVM database  If the user is idle for more than 5 minutes, he would have to restart from the beginning |
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| 1. **User Goal**    1. *Overall Goal of Software System Use*    2. *Critically of Goal* | Customer should complete the transaction of buying the ticket in an efficient manner  High |
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| 1. **User Activity**    1. *Standing*    2. *Sitting* | STM is used in a standing position  User can be physically impaired(on a wheelchair) |
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| 1. **Spatiotemporal**    1. *Time Zone*    2. *Current Time*    3. *Location* | Every transaction carried out have to be saved on the server database in standard time (For e.g. GMT)  Ticket is bought according to the local time  Available nearly at every STM station |
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| 1. **Natural**    1. *Light* | Light should be adjustable |
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| 1. **Technical Environment**    1. *Hardware*       1. *Screen Type*       2. *Keyboard Type*    2. *Network*       1. *Connectivity*       2. *Stability*    3. *System Software*       1. *System Software*       2. *Server*    4. *Reliability* | CPU interface with buttons on the side to select any option  Keys should be of appropriate size and material because of number of different users. Also OK, CANCEL and CLEAR should have the color GREEN, RED and Yellow on the keypad  It should be connected to the server 24/7 to keep the track of every ticket being printed  Should be stable enough to print many ticket in different places at the same time  A small-sized Operating Software for example Windows or any other preferable OS  Server should be working 24/7 using debit/credit cards and accepts cash as well. Every transaction should be recorded in the database  Downtime should be minimal as possible. Maintenance Team should supervise the STM and should fix it as soon as possible |
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| 1. **Social Environment**    1. *Ethical Standards*    2. *Legal Constraints* | Should follow the Standard rules by Canadian Security and Safety Authority  Abide by rules and regulations by Transport Canada |

# Stakeholder Model

* 1. **Mind Map of Stakeholders:**
  2. **The Use Case Model**
  3. **Priority Table of Stakeholders:**

# Team Member-Responsibility Table

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| **Team Member** | **Details of Responsibilities** |
| Babak Boroujerdi Far | Added late in the team. Worked on Introduction(P1) and reviewing the work of other team members |
| Dharani Kumar Palani | Identifying the stakeholders(P3), Prioritizing the stakeholders(P3) and the creating the Use Case Model for stakeholders(P3) |
| Dhruv Ohri | Identifying the stakeholders(P3), prioritizing the stakeholders(P3) and creating mind map of stakeholders(P3) |
| Naresh Kumar | Management of Team, dividing of Tasks equally among all team members, Introduction(P1) and Context of Use Model(P2) |
| Shu Liu | Introduction(P1), Context of Use Model(P2) and Identifying the stakeholders(P3) |
| Xiaodong Li | Identifying the stakeholders(P3), prioritizing the stakeholders(P3) and creating mind map of stakeholders(P3) |
| Yang Liu | Identifying the stakeholders(P3), prioritizing the stakeholders(P3) and the creating the use case model for stakeholders(P3) |

P1: Problem 1

P2: Problem 2

P3: Problem 3

# Tools Used for Deliverable 1

# References