(An Excerpt of a Submission to City of Richmond Hill, Ontario, Canada)

Meeting Key High Priority Criteria

Different & Better

MRESENCE Enablement Platform (www.mresence.com) and the technology and solutions as services such as

- TeleMeetUp (TMU) with MRESENCE
- TMU Widget (Video presentation for TMU Widget / TMUBOT)
- TMUBOT (Video presentation for TMU Widget / TMUBOT (at 2:10 of the video))

are the proposed solutions of this submission. They are different and much better by design than any other virtual interactions and video conference technology/solutions/services now available in the market anywhere including similar solutions or services currently used in the City of Richmond Hill such as Zoom, Microsoft Teams, Google Meet, Cisco Webex, etc.

Over and above the core features of the competitions' services, TeleMeetUp offers additionally singularly useful features that enable UX (User Experience) that approximates PRESENCE (which implies being able to do things with convenience and facility when interacting between/among parties existing/present in the same physical space) described as follows:

- SWISTWIT (See What I See Touch What I Touch) function for use by the interacting parties who are geographically apart to pin-point or finger point on an object or a part of document for greater clarity on an explanation and demonstration in a discussion (Video of SWISTWIT Example Use Case, Video of SWISTWIT Tutorial)

  SWISTWIT is a unique functional feature achieved with the application of advanced computer vision technology including VR (Virtual Reality) & MR (Mixed Reality) Streaming, Image Segmentation and Image Fusion. The local user views the remote user's video stream on a smartphone and puts his/her hand behind the smartphone and points or gestures. The rear camera of a smartphone captures the local user's hand, Image Segmentation is used to detect the hand on the local video stream, and Image Fusion is used to merge the images of the hand with the remote user's video stream in real time for both users to see. The image of the local user's hand superimposed on the image of the remote user's environment simulates what the local user would do if in the same physical space and time as the remote user.

- FWIF (Feel What I Feel) - SWISTWIT is being expanded to include FWIF to enable the sensation of touch, warmth and difference in texture of surfaces during interactions in a TMU session among participants, who are geographically apart with the use of just a Smartphone or a Tablet; this is achieved through the application of Haptics technology. (This feature will be available for use by January 1, 2021.)

This function will help realize the showing of empathy across cyberspace and round out the MRESENCE claim which is approximation of PRESENCE by the application of technology.

- Screen-sharing of document of graphics and/or text and/or data by any of the interacting parties to all the other parties in the interaction

- White-boarding function that allows the interacting parties to make sketches and hand-write for quick presentation and illustration during a discussion

- Native Language Chat between/among the interacting parties each speaking or texting in their own language of choice with automatic language translation in real time

- Recording of the entire TMU session in multi-media for archive and for use for future refence or other purposes in posterity

Applications and Use Cases

MRESENCE services cater to industry users as well the general population in various sectors:

- Public Healthcare – TeleCare with MRESENCE – Primary Care, Home-based Medicine and Mental Healthcare; TeleMeetUp for the aging population

- Public Works - TMU in TeleCollaboration for installation, trouble-shooting and general maintenance

- Social Welfare – Budroid with MRESENCE for remote care and recreation for the elderly; CJ MRESENCE for routine and incidental reporting; eGovernment operation incorporating MRESENCE services to avoid the need to provide in-person service in completing registration forms, license renewal, paying utility bills – this will greatly reduce the need of long queues of consumers waiting for their turn to have a face-to-face conversation / interaction with a service agent.

- Public Education – On-line distance learning and remote classroom with one-to-one, one-to-many, and many-to-one configuration

- Public Safety – Incorporating MRESENCE service features in the mobile communication devices use by the police force and other public safety enforcement agencies

Use Cases:

TeleCare with MRESENCE

- TeleCare Brochure
- TMU with MRESENCE Brochure
- TeleMeetUp Brochure
- Budroid Brochure
- TMU with MRESENCE for Mental Healthcare Brochure

Medical Tourism

- MRESENCE for Medical Tourism Brochure

Routine Reporting among various unit locations of a hospital; incidental reporting

- CJ MRESENCE Brochure

Authenticated execution of legal documents during COVID-19 Lockdown with the use of TMU with MRESENCE

- TMU Authenticate Brochure

Demonstration / Showroom and Virtual Exhibition with TMU with MRESENCE overcoming language barriers

- Video for illustration: Pottery business across borders and language barriers
- MRESENCE song

MREXHIBITION – Exhibition in Mixed Reality is a democratized, convenient and economical way of doing Exhibition with distinct advantages:

- Elimination of the high cost of physical venue, exhibition booth space
- Elimination of the tedious work and high cost relative to exhibition display – transportation/construction of show display – the setting up & tearing down
- Elimination of costs of travel, per diem expenditure of the personnel involved in working on the exhibition
- Enhancement of the efficacy and time and cost efficiency of showing products and operation in existing showroom and in manufacturing facility and even operation in situ and in progress with live interaction – interview and discussion – with people at work operation
- Greatly reduced carbon footprint relative to traditional, physical in-person exhibition and conference

Forms of TeleMeetUp

TeleMeetUp (TMU) with MRESENCE is available in various easily consumable forms:

- TMU Widget for a wide range of applications and use cases (Video presentation for TMU Widget / TMUBOT) Commercial Service Launch by November 1, 2020

- TMU Webinar which is a variant of TMU that incorporates special features for configuration and control for use in operating a Webinar effectively and efficiently

  It is available for test-drive now and will be in commercial service production by November 1, 2020.

- TMUBOT that consists of TMU Widget integrated with AI-assisted Conversational Chatbot

  TMUBOT is the result of integrating TMU Widget with an AI-assisted Chatbot with NLP (Natiural Language Processing) and NLU (Natural Language Understanding) capability. It can easily be used to automate Self-Service Conversation. It is capable of Machine Learning – it studies the conversations between the live agent with visitors and understands them and includes them in its resource for use to do better in future automated conversations.

  A live agent can get hints/advice from the AI-assisted Chatbot when they are in TMU conversation with a visitor.

  The service is ready for test-drive now. Commercial service launch is scheduled for January 1, 2021.

- TMU LMS which is a feature-rich and versatile Learning Management System that is enabled with the functionality of TMU for it to be used in all kinds of learning/training situations including for conducting classes for post-secondary education and for use by enterprises and institutions.

  Commercial service launch by January 1, 2021.

- CJ MRESENCE Citizen Journalism with MRESENCE which is crowdsourcing news gathering service. It is very useful for routine reporting as well as incidental reporting by personnel in the outposts or the field. (CJ MRESENCE Brochure)

Remarkable Recognition

MRESENCE services have been pre-qualified by Innovation Solutions Canada for conducting Thematic Test Plan for COVID-19 related applications being arranged by Procurement Canada with various government departments of Canada.

The following presentation addresses the essential topics which are the focus of evaluation:

- Delivers Value and Solves Problems

- Practical & Doable for commercial deployment and public service provision within 6 -12 months

- Boosts Productivity of Work Operations and engenders significant cost reductions

Problems identified & Solutions provided by TeleMeetUp technology/services in easily adoptable and consumable form as services enabled with the use of TMU Widget

Pressing Problems Now during the First and impending Second Wave of COVID-19 Pandemic

Problem (1)

The requirement of Social Distancing as a proven way of combating COVID-19 and the various restrictions imposed on group gathering and congregation

Solution

Use TeleMeetUp virtual interactions & video conference service as TMU Widget for various use cases. TeleCare, Virtual Classroom, Virtual Funeral Events, Webinar, Virtual Showroom and Exhibition, etc. View Video presentation for TMU Widget / TMUBOT.

Problem (2)

The reported upsurge in caseloads handled by Kids Help Phone service and the social workers dealing with needs of school children in York Region

Solution

Use TMU Widget on website that offers Emergency Help service to connect specialists and clients who are distressed children and their parents in TMU session for virtual interactions and video conference in dealing with their problems/situations and in helping to provide mental health care and alleviate anxiety and depression issues wrought by sheltering-in-place restrictions mandated by the Ontario Government. View Example Use Case of TMU Widget in TeleCare.

Problem (3)

The need to reduce the period of hospitalization of an inpatient after critical care without compromising the quality of medical care as a way to optimize the utilization of the human resources and facility of the hospital

Solution

TMU Widget based TeleCare can provide quality care to the patient, as they convalescence at home, with adequate and timely passive and active observation and monitoring in virtual interactive sessions over TMU with MRESENCE between the caregiver who is with the patient at home and the qualified nurse assigned to provide medical care to the patient in their journey to recovery.

With this mode of caregiving the healthcare service can reduce significant amount of expenditure that is otherwise incurred in arranging for follow-up visits by patient to the hospital and follow-up visits by the nurse to see the patient at home.

The use of TMU with MRESENCE will cut costs of operation without compromising on the quality of care provided to the patient.

Note that TMU with MRESENCE enables greater efficacy and efficiency of work operation involving people who are geographically apart with the functional capability of

- screen-sharing of documents showing graphics and text
- white-boarding for sketching of ideas and handwriting for illustrations
- SWISTWIT function for pinpointing or finger-pointing

for a greater level of clarity in discussion among the patient, caregiver with the patient at home and the nurse at the hospital, and, whenever it is required, a medical specialist can be brought into the TMU session for examination and discussion and advice in a timely fashion.

Note that all these activities can be conducted without language barrier with the use of the Native Language Chat function of TMU for speech-to-text, text-to-text and text-to-speech with automatic language translation in real time.

Each of the parties can be in conversation with the others in the virtual interaction using just their language of choice for the conversation.

This feature is particularly important and relevant in City of Richmond Hill which is a multi-lingual, multi-racial, multi-ethnic community.

Note that the entire TMU session is automatically recorded in multi-media for use of future reference and further discussion and examination and for accountability and for archiving for use in posterity.

TMU with MRESENCE Brochure

TMU with MRESENCE for Mental Healthcare Brochure

Problem (4)

The need of commerce and other economic activity of businesses in the City and the various departments of the Municipal Government that deal with the public / general population to have an effective, efficient and high-efficacy way of communication among people who should only be interacting with one another geographically apart to avoid the spread of COVID-19.

Solution

Use TMU Widget that is configured appropriately to suit the purpose of use on the homepage of every one of the websites operated by the departments of municipal administration of the City of Richmond Hill.

To promote the use of TMU Widget by all businesses in the City of Richmond Hill for the benefits and advantages listed as follows:

- Virtual interactions with MRESENCE in dealing clients and new prospects
  - In providing sales and service support to clients & prospects
  - In giving demonstration and exhibitions of products and services in MRESENCE
  - In concluding business deals with clarity of discussion and illustration in MRESENCE
  - In executing the signing of agreements with legal authentication (TMU Authenticate Brochure)

- Overcoming any possible language barrier in conducting business discussion with prospects who are non-English speakers

When the business requires an effective and efficient way to showcase the business' services and/or products, TMU Widget provides a convenient and instantly available facility to offer demonstration and exhibition of the business' products and/or services in showrooms, test-labs, shop-floors, manufacturing plants and/or outdoor displays of large machinery.

This mode of exhibition with the use of TMU with MRESENCE is a democratized, convenient and economical way of doing Exhibition with the following distinct advantages:

- Elimination of the high cost of physical venue, exhibition booth space
- Elimination of the tedious work and high cost relative to exhibition display – transportation/construction of show display – the setting up & tearing down
- Elimination of costs of travel, per diem expenditure of the personnel involved in working on the exhibition
- Enhancement of the efficacy and time and cost efficiency of showing products and operation in existing showroom and in manufacturing facility and even operation in situ and in progress with live interaction – interview and discussion – with people at work operation
- Greatly reduced carbon footprint relative to traditional, physical in-person exhibition and conference

Video presentation of an example: Pottery business across borders and language barriers

The improved productivity that is derived from the greater efficacy and efficiency in work operations involving people who are geographically apart will foster great economic development in the City of Richmond Hill.

Problem (5)

The need to improve Public Safety and Law Enforcement in the public space

Solution

TMU with MRESENCE & TMU Widget should be a standard feature in all websites of the Municipality that deal with the general public for public safety information and education

and should be integrated with the communication system currently in use by the law enforcement agency of the City of Richmond Hill.

All the functional features of MRESENCE are essential for enabling work operation for the maintenance of public safety in the City of Richmond Hill at the highest level of efficacy and efficiency.

CJ MRESENCE, a MRESENCE-enabled service for Citizen Journalism is a tool that facilitates timely and un-adulterated reporting of incidents as they occur. It can greatly contribute to the maintenance of public safety, to investigation of crimes or extraordinary events as they occur and to the accountability required of the situation and people involved. It can be used for report of accidents and incidents by police patrolling various parts of the City. (CJ MRESENCE Brochure)

Problem (6)

The need to improve the efficacy and efficiency of work operations of Public Works in the City

Solution

Public works are a broad category of infrastructure projects, financed and constructed by the government, for recreational, employment, and health and safety uses in the greater community.

They include public buildings (municipal buildings, schools, hospitals), transport infrastructure (roads, railroads, bridges, pipelines, canals, ports, airports), public spaces (public squares, parks, beaches), public services (water supply and treatment, sewage treatment, electrical grid, dams), and other.

TMU service made available in easily accessible and consumable forms as TMU Widget facilitates and encourages reporting of work incidents, request for explanation and clarification and confirmation of correct/accurate understanding of situation and requirement of the operation of work at hand between the field personnel and the manager/administrator/designer of the work projects when and where clarity of reporting and discussion and direction is required to avoid errors, accidents, and damages that may ensue. Such a facility for timely communication and discussion would greatly improve work production and the productivity of the projects of work.

The Native Language Chat function of TMU for speech-to-text, text-to-text and text-to-speech conversation with automatic language translation in real time and the facility of white-boarding for sketching out ideas to aid explanation and illustration allow for the tradespeople to communicate with greater ease and efficiency.

Problem (7)

Social Welfare and greater inclusiveness

Solution

A social welfare system provides assistance to individuals and families in need.

Mayors of leading cities of the world view opportunity and inclusiveness as critical benchmarks of a successful community.

City of Richmond Hill is a new modern city and a diverse multi-racial, multi-lingual, multi-ethnic and multi-cultural society.

The Municipality has an unprecedented great opportunity to plan for building a kinder, more equitable and more enlightened society through social edification. www.socialedification.com

The extensive deployment of MRESENCE technology as cloud-based managed services in the form of TMU Widget and various other forms above-stated would contribute to a kinder treatment and better quality of care for the aging and ailing population of the City.

The use of TMU video conference service enables primary care, home based medicine and mental health care to be provided/delivered in kinder, more equitable manner.

TMU will also provide low-income people of the population easier, more affordable access to essential services.

The popular use of services of TMU Widget for virtual classrooms, and virtual interaction for recreation and social activities as depicted in TMU Widget video (Video presentation for TMU Widget / TMUBOT) and TMU-Webinar, TMU-LMS and TMUBOT and the popular use of CJ MRESENCE by the City and the general population will foster a better informed and more enlightened society to combat the propagation of fake news and misinformation in social media.

Post COVID-19 Pandemic World's New Normal

The study Atos Report on what the world would look like after the COVID-19 crisis shows that post COVID-19 Crisis some deep and long-lasting changes that occur during the Crisis will become part of the "new normal".

Several aspects will become singularly relevant:

- Remote collaborative work will be a new social norm; those who were averse to it will have to adapt quickly.
- Cybersecurity will be even more critical since vulnerabilities are increasing.

- Traceability will also become a major issue.
- Internet of Things and Blockchain technologies could play an even more prominent role.
- Supply chains will be strongly reshaped in the coming years, both in the physical world and in the data world, with digital sovereignty gaining considerable relevance.
- Decarbonization in all production processes, including digital, will sharply accelerate.

MRESENCE Enablement Platform (www.mresence.com) is designed to incorporate and possess all these attributes so as to meet the demands of the New Normal in a post COVID-19 world. These include

- End-to-end Encryption of communication among the participants in virtual interactions
- Curation of captured video footage
- Recording and archiving digital assets including video footage in hashed Blockchain implementation
- Big Data Analytics
- AI-assisted Conversational Chatbot with Machine Learning capability operating in integration with Live Conversation between/among human participants in virtual interactions and video conference in multi-media

Decarbonization

Air Pollution was found to have drastically reduced during the period of general Lockdown in China as people were sheltering in place and avoiding social contact to curb the spread of the novel coronavirus.

NASA images show 'significant decreases' in air pollution over China amid coronavirus economic slowdown. https://www.cnbc.com/2020/03/02/nasa-images-chinas-air-pollution-decreased-amid-coronavirus-measures.html

TMU Virtual Interactions that can enhance the efficacy and efficiency of work operations involving people and machines that are geographically dispersed would greatly contribute towards achieving decarbonization prior to the general and ubiquitous deployment of non-carbon-based energy source.

City of Richmond Hill and indeed the rest of the world face a very challenging situation, probably leading to a new world, but with ample room for opportunity and change.

Our response must not focus solely on immediate actions. Since the crisis will trigger deep and lasting changes, we must focus on transformational actions; those that will enable organizations to have an even stronger position in the new post-crisis world.

In general, organizations need to pass the inflection point from legacy focus to new business focus. Agility and flexibility will derive from data-centricity, lighter processes and high levels of intelligent automation. Digital platforms and ecosystems must be a priority, since they will be the lever for that transition from legacy to digital focus.

Implementation

The proposed technology/solutions as cloud-based managed service provision with at-scale capacity to cope with any large volume of usage demand is ready for deployment now. TeleMeetUp (TMU) service platform has been running in beta operation since April 2020. Commercial service provision is scheduled for November 1, 2020.

It is managed service pay-per-use service. As such, there is no CAPEX required of the City. The OPEX will amount to only a fraction of the current expenditure of the City for the provision of services that are arguably inadequate for dealing / coping with problems at hand.

The proposed deployment of MRESENCE-enabled services by the City of Richmond Hill will engender significant savings and enhance the quality of work and living condition of the general population.

Architecture

The City of Richmond Hill ("CoRH") will be set up as a Service Provider in Private Mode Operation in the TMU Service Platform.

At high level, there is one business relationship between CoRH and Ecocarrier / TMU Service Provision.

As Service Provider in Private Mode Operation, CoRH is afforded the latitude to manage TMU service provision in all user-public-facing aspects of the service provision including

- secured on-boarding
- setting up Account/User ID's
- activating and deactivating the accounts
- etc.

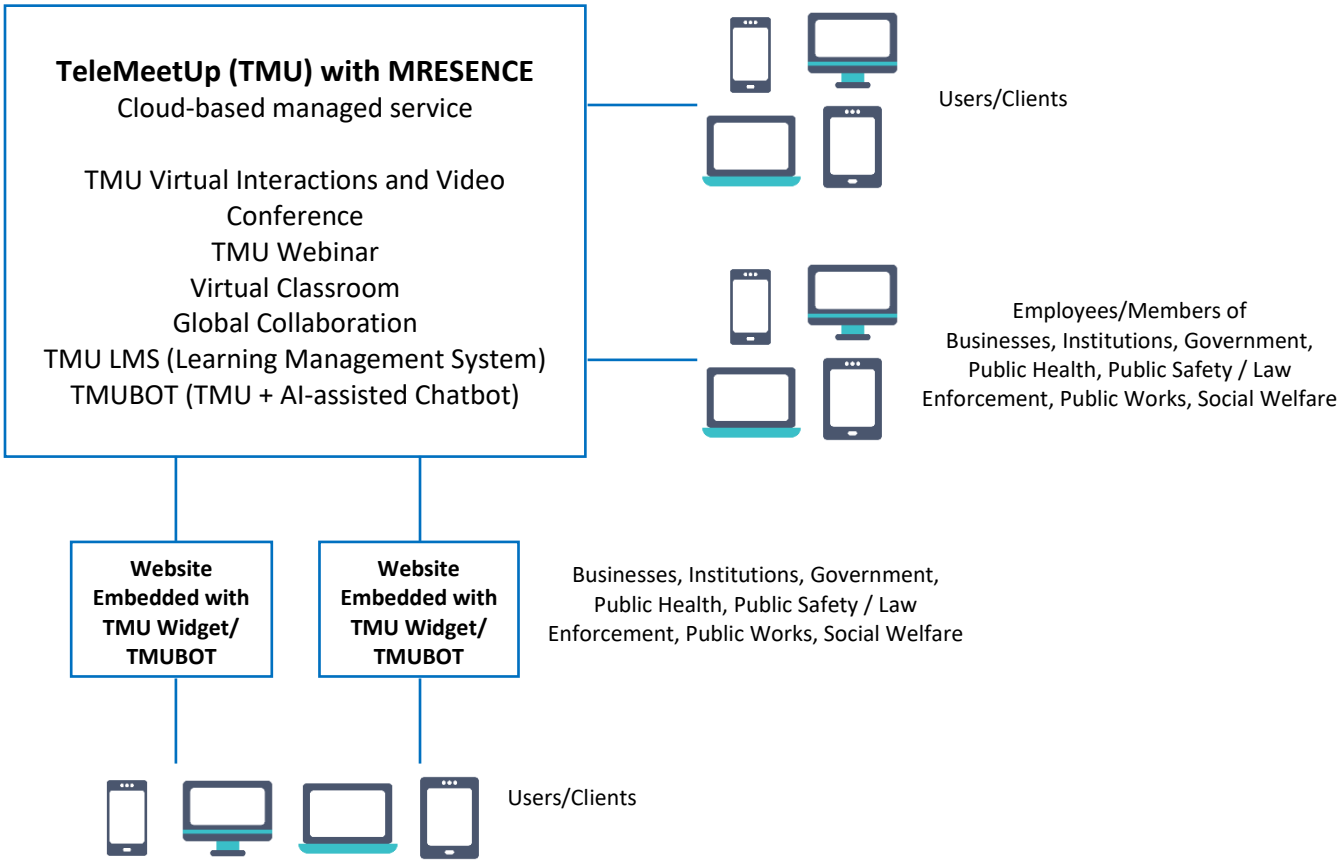
CoRH will have access to a web-based Dashboard that provides data on

- Performance of the service platform
- User Information and relative usage volume and costs
- Billing and Accounting information
- Graphical and Heat Map display

TMU service provision is to be through the use of TMU Widgets or TMUBOT each of which is a discrete plug-in module to be configured to suit the use case and be installed on a webpage (usually the Homepage) of a website that services the user public.

We envisage an architecture of the ecosystem for service provision with TMU Widget facility operating in conjunction with TMU Service Platform as one depicted conceptually as follows:

City of Richmond Hill Deployment of TeleMeetUp (TMU) with MRESENCE Service



Addressing problems:

1. Enabling social distancing on group gatherings
2. Handling upsurge in caseloads of Kids Help Phone
3. Reducing the period of hospitalization
4. Enabling communication among people geographically apart
5. Improving Public Safety and Law Enforcement
6. Improving efficacy and efficiency of operations of Public Works
7. Increasing social welfare and inclusiveness

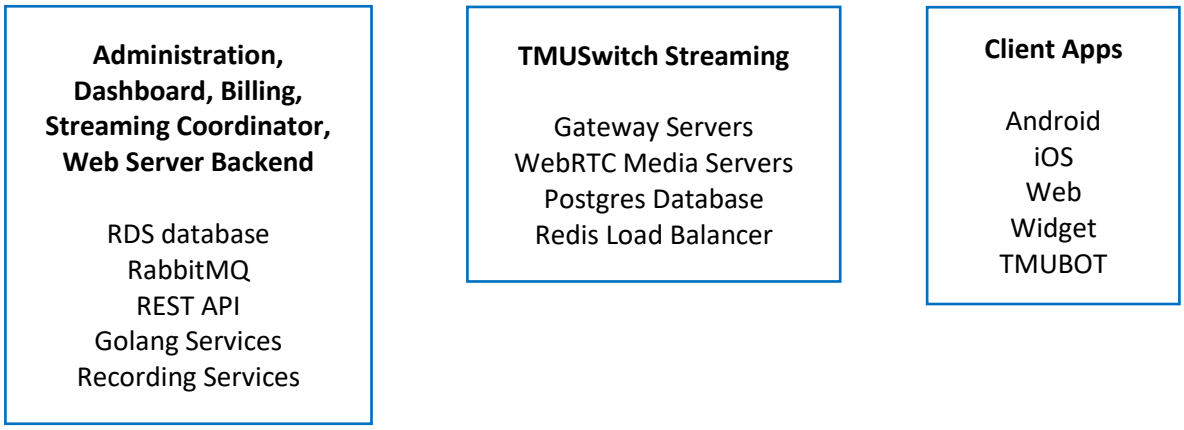
Features

Audio/video conference
Text chat
Screen-sharing
White-boarding
Native Language Chat in text or speech with automatic translation
SWISTWIT (See What I See Touch What I Touch)
Recording
Chatbot with AI-assisted learning

Coming soon

End-to-end encryption
Curation of video
Archiving digital assets in hashed Blockchain implementation
Big Data Analytics

TeleMeetUp (TMU) with MRESENCE Components



Examples

A TMU Widget that is appropriately configured to suit the requirement of the use case is installed in the homepage or a particular webpage of the website of a Department or Organization or Institution or Public Service Facility that is managed/operated by the municipal government of the City of Richmond Hill.

The following examples of the specific configuration of the TMU Widget illustrate the possible use for various kinds of application:

(1) Mackenzie Vaughan Hospital

When visitors to the website tap or click the TMU Widget (which may be in the form of an icon specially designed for use by the hospital), they are presented with a menu that lists the following selection items:

- FAQ
- Triage for emergency admission
- Home Based Medicine
- Mental Health Care
- Webinar
- Exercise Classes

(2) Parks, Trails & Natural Areas

When visitors to the website tap or click the TMUBOT (which may be in the form of an icon specially designed for use by the hospital), they are presented with an AI-assisted Conversational Chatbot and a menu for being connected to live agents that deal with various situations or special enquiries.

- AI-assisted Conversational Chatbox to deal with Frequently Asked Questions and provide available answers

- Connection to live agents:
  - To pose special questions
  - To report an emergency
  - To discuss a proposal that requires show and tell
  - To attend a Webinar
  - To attend a scheduled interactive training on line