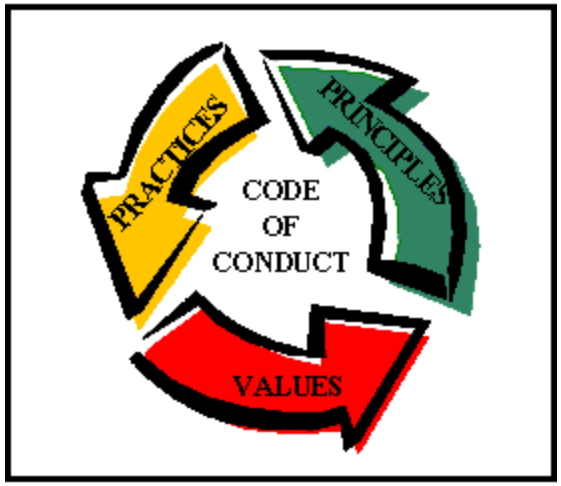
AOEC's Panel Pitch (Present Pages 1-17)

Project Millennium and Green Globe Responsiveness

Connected Emergency Response (CER)



Subsistence and Emergence

Team AOEC

Global Field Balancing

AOEC's Panel Pitch

- **Team name:** AOEC
- **DevPost project name:** Green Globe Responsiveness
- Our submission for the SAAI Factory Hackathon

  Landing page for the SAAI Factory Hackathon:
- www.venkataoec.wixsite.com/futuregenart
- **Panel of interest:** Connected Emergency
- Response Centre
- **Team details:**
- 1. K.S.Venkatram (Gap Analyst, AOEC)
- 2. Abhiram (Technical Consultant, Operations Advisor)
- 3. Dorai Raj S N (Senior Academician for Accountancy, Commerce, Economics and Policy development)
- 4. Sujendra Raju (GOK, Retired Commercial Tax Commissioner)
- 5. Lakshmi (Senior Academician for Science and Mathematics)
- 6. Aakkash K V (BTECH Automotive Engineering, interested in CCMA)
- CCMA stands for Climate Change Mitigation and Adaptation

Milestones for CCMA

Global Challenges in 2020/2021

Ref: Project Millennium and Green Globe responsiveness

Global Challenges in 2020/2021

- 1. How can sustainable development be achieved for all while addressing global climate change?
- 2. How can everyone have sufficient clean water without conflict?
- 3. How can population growth and resources be brought into balance?
- 4. How can genuine democracy emerge from authoritarian regimes?
- 5. How can decision making be enhanced by integrating improved global foresight during unprecedented accelerating change?
- 6. How can the global convergence of information and communications technologies work for everyone?
- 7. How can ethical market economies be encouraged to help reduce the gap between rich and poor?
- 8. How can the threat of new and reemerging diseases and immune micro-organisms be reduced?

Ref: Project Millennium and Green Globe responsiveness

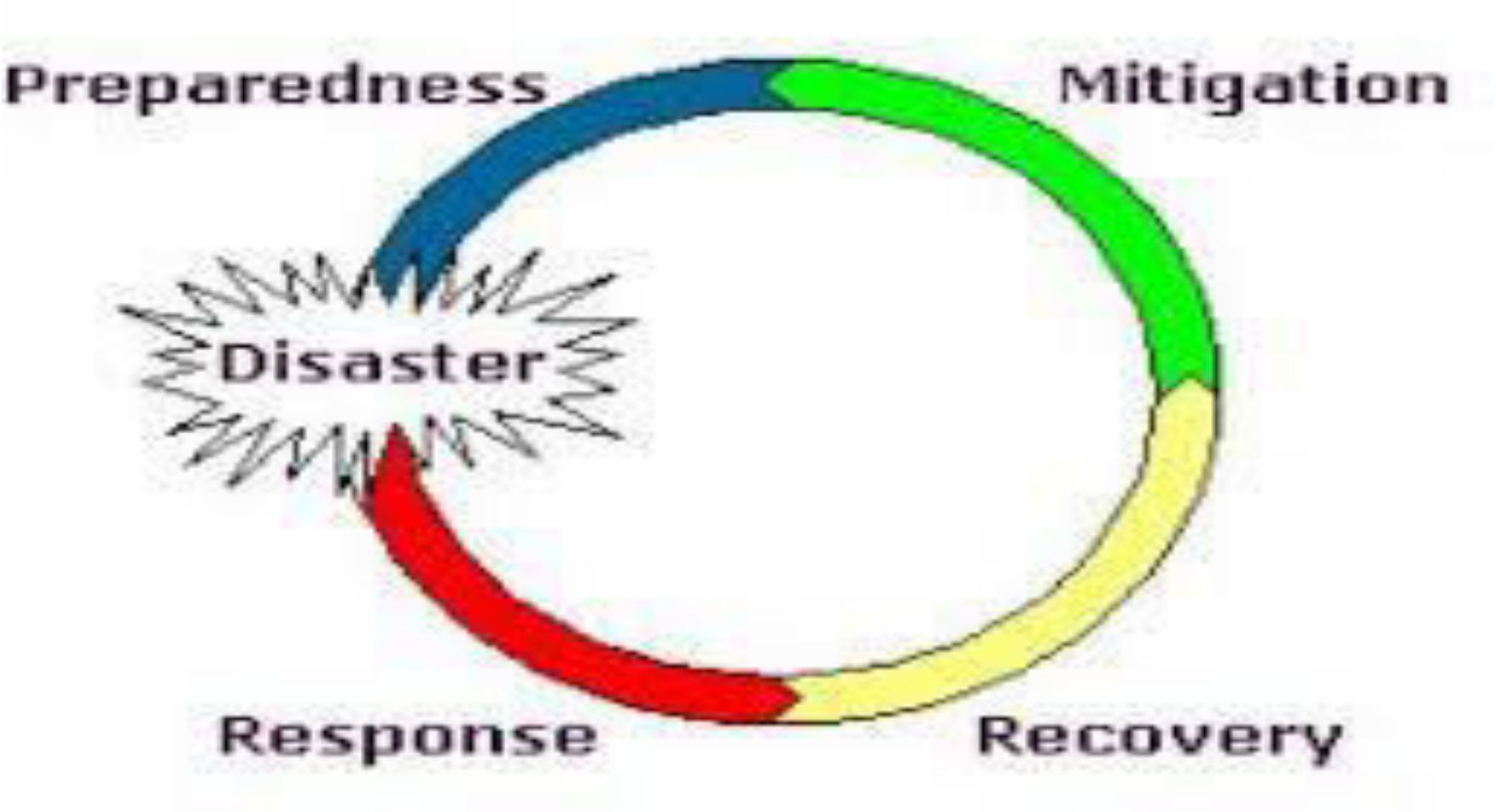
Global Challenges in 2020/2021

- **9. How can education make humanity more intelligent, knowledgeable, and wise enough to address its global challenges?**
- **10. How can shared values and new security strategies reduce ethnic conflicts, terrorism, and the use of weapons of mass destruction?**
- **11. How can the changing status of women help improve the human condition?**
- **12. How can transnational organized crime networks be stopped from becoming more powerful and sophisticated global enterprises?**
- **13. How can growing energy demands be met safely and efficiently?**
- **14. How can scientific and technological breakthroughs be accelerated to improve the human condition?**
- **15. How can ethical considerations become more routinely incorporated into global decisions?**

Ref: Project Millennium and Green Globe responsiveness

As part of judging criteria for Creativity and Originality

We review how scientific and technological breakthroughs can be accelerated to improve the human condition in emergencies



Our breakthrough: The Connected Emergency Response

Connected Emergency Response Centre

How Connected is Art/design/ Allied innovation to help emergency response

SLA(s), OLA(s), UC(s) and LifeScores.

Till date all creative or pre-decided art forms that appear in products or innovations (to help Emergency Response and/or Disaster management) are dependent on business decisions or some governing body or stakeholder's general opinion.
There is no agreement or contract to ensure connected emergency response, where training or machine learning for a LifeScore can evaluate the performance of the Visuals/Audio feedback/Tactile cues to help unique / common Preparedness, Mitigation, Response, Recovery and/or Assistance on a type of emergency basis.

Connected Emergency Response Centre

<u>As part of criteria for Art and Technology</u>

For the SAAI Factory Hackathon (problem solving), we propose a Connected Emergency Response Centre (CERC) with classified CERC-art.

The CERC and the CERC-art can help sites and occupants

a. **understand,**
b. **prepare for,**
c. **incorporate readiness and**
d. **mitigate adversity due to climate change.**

In our journey to recommend the CERC, we have sent out insights to sites of different natures like residential sites, educational institutions, business sites like apparels & garments industrial units, government sites, banks, parks & gardens etc where responses from the stakeholders are still being consolidated.

Connected Emergency Response Centre

How effective is the infusion of this solution?

We highlight that our recommendation is simple at the preliminary level but is a macro-and-micro level when being incorporated.

As a gap analysis consultancy, we have been developing solution highlights or details for the macro-and-micro level and have numerous proof of concept websites and associated documents to help innovation, agility, responsiveness and risk reduction.

Connected Emergency Response Centre

Is it showing a new approach towards global challenges related data input, data output or datasets?

The preliminary highlight is the addition of

1. **An Emergency Response pin code to existing pin codes,**

2. **LifeScores to sites & occupants**

where sense & respond systems with Art and AI/ML are deployed to swiftly understand threat/disaster/accelerated risk and thereon help respond to save & protect life.

Connected Emergency Response Centre

We find that Art and AI/ML can be used in

1. **artwork/ art forms/ allied innovations/**
2. **system design/**
3. **system operation/**
4. **system management/**
5. **system maintenance/**
6. **system incidence management/**
7. **system repair/**
8. **system documentation and even**
9. **connected emergency response.**

Our work in progress URL www.venkataoec.wixsite.com/futuregenart

Connected Emergency Response Centre

Does our project integrate machine learning in an art form/allied innovative in an unexpected way?

- **We propose the augmenting of regular art, styles or features for a newer CERC-art which helps Emergency Response at a building, facility or site**

- **This newer CERC-art will help Emergency Response by relating to Visual, Auditory or Tactile senses used during emergency response via a new Ability specific or LifeScore Accentuated Risk mitigator.**

- **The Risk mitigator (with integrated machine learning) will identify the problem solving or resultant SMART Interaction / Intervention possible through the newer CERC-art.**

Connected Emergency Response Centre

- **From conventional Artistic interest to Timely ability in Art**
- **The Risk Mitigator will require the architect/designer/ innovator to accentuate the CERC-art so it can help emergency response via sense & respond solutions that operate for**
- **1. Specific SLA(s),**
- **2. Measurable Abilities for Visual/Auditory/Tactile senses, Achievable OLA(s),**
- **3. Relevant UC(s) and**
- **4. Timely status/warnings/alarms.**

- **Does it work outside of the competition?**
- **Our new CERC Social Accountability standard helps**
- **1. design-bid-build,**
- **2. design-build or**
- **3. construct buildings, facilities or sites with sense and respond solutions for CCMA influencers and Connected Emergencies.**

Connected Emergency Response Centre

Can our project inspire other ideas?

- **To inspire others, we use an identifiable/inspirational/infusable CERC-labeling scheme for this newer CERC-art.**

- **The CERC-labeling scheme will be designed, developed and improved for a new CERC-labeling network**

- **The new CERC-labeling network will seek advice, consults with stakeholders or even uses site specific surveys/ feedback/machine learning to recognize the requirements being experienced during emergency response or evacuation at sites.**

- **This is how we expect to improve social accountability in the use of Art/Allied innovations and AI/ML to save and protect life**

Connected Emergency Response Centre

For improved social accountability

- **Our CERC-labeling scheme will be criteria based such as whether the CERC-art is exclusively useful or connects as**
- **1. a Visual ALARM/cue, or**
- **2. an Auditory ALARM/cue, or**
- **3. a Tactile ALARM/cue and/or**
- **4. Specific awareness & response based ALARM/cue.**

As the Scale of an Awesome idea

- Our CERC-labeling scheme will identify the scope of problem solving for the CERC art, that is whether the CERC-art and accountability label is for an **Independent problem solving**, or **National level problem solving**, or **International level problem solving** or even **Multi-national level problem solving**.

Connected Emergency Response Centre

- **How originality and innovativeness is retained for Copyright, Intellectual property or secure art/art forms?**
- **Our CERC-art will also have a specialized CERC-art gallery where art / art forms / designs / allied innovations that are for Connected Emergency Response will be showcased.**

- **As our problem solving does expect that the designer/artist/ innovator may vary, that is, the designer/artist/ innovator responding by using AI/ML to make the CERC art more connected to the site, occupancy or community may not be the creator / conceptual driver, or may not have contacts with the creator / conceptual driver, the CERC showcase will permit the CERC community to edition the CERC-art being versioned/ improved/ customized via Machine learning and Training.**

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- **As a selected project prototype/insight**
- We look at a scenario where CERC-art deployments are made to help people use an Emergency Exit / Exit and stairway.
- **For our review, today the Emergency Exit / Exit has the following inclusion**

  Visual ALARM/cue: Illustration of Exit sign only

  We find for Connected Emergency Response, it must include:

  Ability specific Visual ALARM/cue: where there is a CERC assistant included and Critical Path Method to be used

  An **Auditory ALARM/cue:** Audio feedback for Exit assistant and Critical Path Method to be used

  A **Tactile ALARM:** Touch based feedback for sense & respond functions based on SLA(s), OLA(s), UC(s) and Machine Learning

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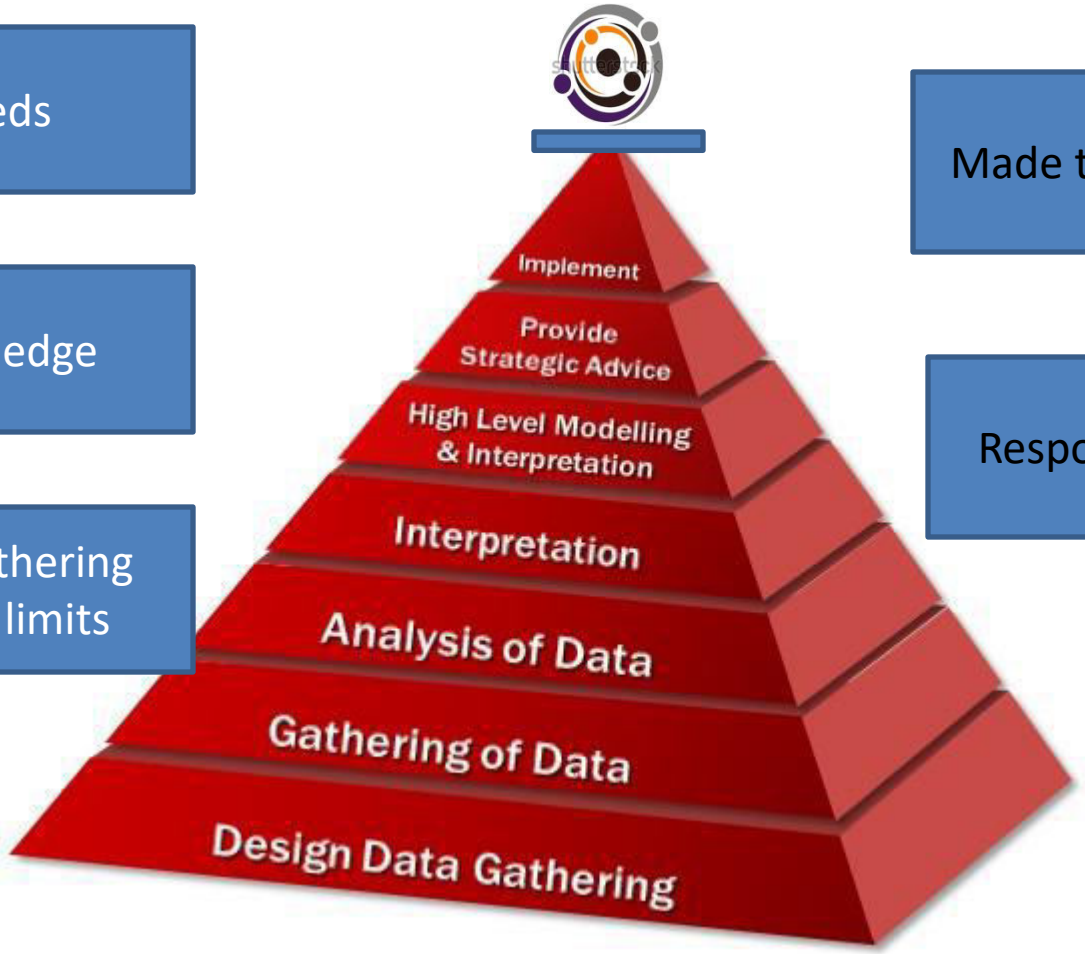
Needs

Knowledge

Data gathering within limits



Made to assist codes

Response Strategist

Walkthrough as time permits about Stepping beyond limits for Connected Emergency Response via art/design/allied innovation

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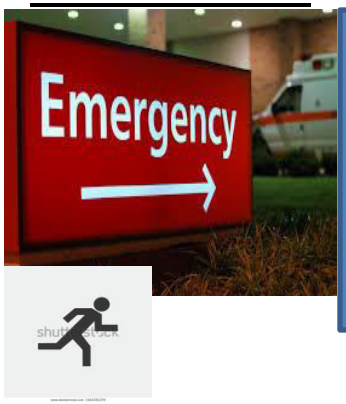
Visual CERC logo/illustration for assistant

Exit assistant



Codification

RMUA 1____

TE _____

A _____

ML 1____

The initial step is to codify the Visual

Connected Emergency Response Centre

- **For a case study in this hackathon we consider an assistant for an** Emergency Exit/Exit**, where** LifeScore dynamics of the ability of occupants could relate to “not being to run
- steadily or fast, not being able to use, assist or clasp with hands firmly, not being able to walk down steps/not being able to climb steps easily, not being well to accomplish emergency response, needing to be assisted in mobility, being pregnant, needing to carry a baby, or child or known aged person”. We term this as **Equity Level in Biocentrism.**
- The lack of Biocentrism in the Emergency Exit/Exit/associated stairway could be addressed via our LifeScore codification, a Response strategist and Made-to-assist codes that need to be incorporated in the assistant for these pre-requisites and Equity level.

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Example for a Visual CERC deployment for

an Exit assistant

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The running man illustration has associated accentuated illustrations that occupants will need to be instructed about

The meaning for this accentuation is that the exit is Useful for a particular age group, has self-help information that can be reviewed as possible, has added-help information for old, sick or differently able, the exit is sensitive to the ability of the occupants & has CERC incorporation, the exit expects Self-organization interaction to address issues when people rush, the exit is Internet integrated to sense & respond via connectivity/addon(s(to help occupants/security/facility staff/CERC staff utilize the exit in a planned way during a drill, evacuation or connected emergency response.

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<u>As part of integrated / independent Service Level Agreements</u>

The proposed CERC deployment will use a Response-strategist / Made-to-assist-codes to incorporate connected accountability (for LifeScore related response strategies, 24/7 expectations or experiences).

Visual illustrations + Response-strategist / Made-to-assist-codes = additions to the visual illustrations

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<u>As part of integrated / independent Operations Level Agreements</u>

Visual illustrations + Machine Learning / Training = Creative Adversial Network solutions or Generative Adversial Network solutions or Convolutional Network solutions for Bio-centrism

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Connected Emergency Response Centre

Solution finding via a Response-strategist / Made-to-assist-codes

By needing to address LifeScore related problem solving and 24/7 expectations or experiences, the visual illustration deployed will be accentuated to include

1. Pre-requisites actualized

[a] Useful for a particular age group

[b] Useful for any age group

[c] Has self-help information

[d] Has added-help information for old, sick or differently able

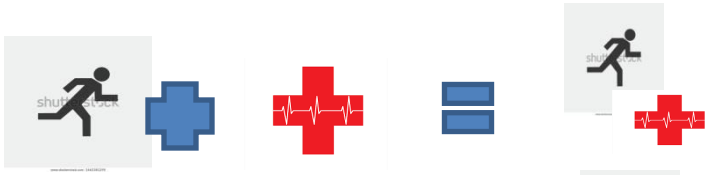
Connected Emergency Response Centre

Solution finding via a Response-strategist / Made-to-assist-codes

By needing to address LifeScore related problem solving and 24/7 expectations or experiences, the visual illustration deployed will be accentuated to include

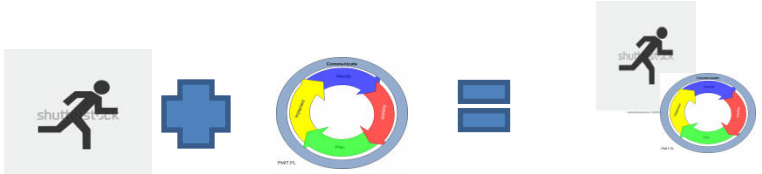
2. Thinking expected

[a] LifeScore Sensitized thinking expected

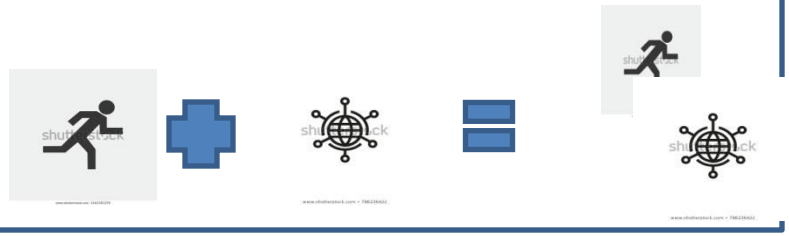


[b] Remedial thinking expected

[c] Self-organization for emergency response expected



[d] Is Internet Interfaced



Connected Emergency Response Centre

Solution finding via a Response-strategist / Made-to-assist-codes

By needing to address LifeScore related problem solving and 24/7 expectations or experiences, the vital mindfulness forum will include details for

3. Application

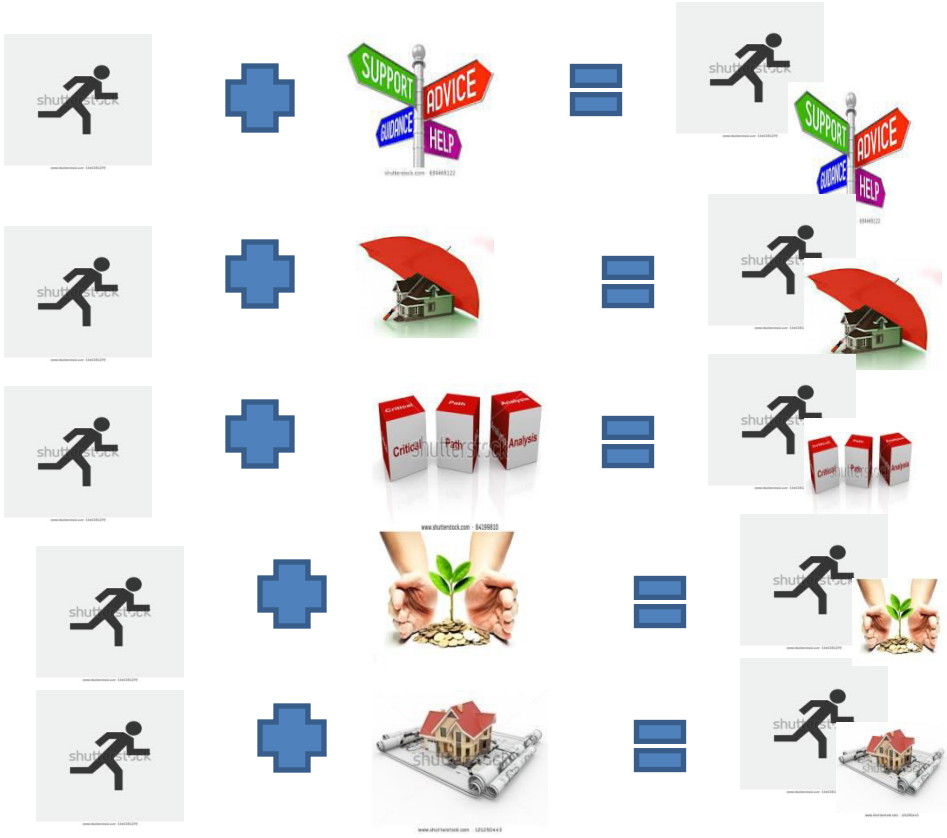
[a] Preparedness

[b] Mitigation

[c] Response

[d] Recovery

[e} CERC



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Solution finding via a Response-strategist / Made-to-assist-codes

By needing to address LifeScore related problem solving and 24/7 expectations or experiences the vital mindfulness forum will include details for

4. Machine Learning for the accentuation

[a] Creative Adversial Network solutions

[b] Generative Adversial Network solutions

[c] Convolutional Network solutions

[d] Future CERC solutions

Connected Emergency Response Centre

- **Solution and Approach**
- **Our CERLT-S & its open-source-to=be-developed-tools implement / improve Bio-centrism for Connected Emergency Response by**
- [a] Creative Adversial Network solutions (with Immersive & Perceptive Time Series Forecasting) for the Real Time Score, Interactive factors
- [b] Generative Adversial Network solutions (with Objective Reality Recommendation engine) for the Process-oriented factors, Performance factors
- [c] Convolutional Network solutions (with Strategic Connect Feature extraction) for Green Globe responsiveness
- [d] Future CERC solutions (with Classification or Supervised Learning) for the Environment factors

Connected Emergency Response Centre

- **CERLT-S Solution and Approach**
- For object recognition (like the running man with the Emergency exit sign), we use Keras to create a CNN (Convolutional Neural Network) for object recognition, which we call as Strategic Connect Feature extraction from a Visual depiction/sign/art work that helps occupants or responders during a drill, or evacuation or for risk mitigation.

- For our promo, we use CIFAR-10 for this task. CIFAR-10 stands for Canadian Institute for Advanced Research.

Connected Emergency Response Centre

- **CERLT-S Solution and Approach**
- For this promo, we use a Content based recommendation engine to recommend Visual CERC codification for the Emergency exit assistant.

- **We also use Immersive & Perceptive Time Series Forecasting for the Real Time Score, Interactive factors**
- By Time Series Forecasting for the Real Time Score data, Interactive factors data, we can forecast the adverse impact, or usefulness or relevance of the Visual CERC art/art form/art work/allied innovation for the Emergency exit assistant.
- We build an ARIMA model for the Time Series for the Real Time Score, Interactive factors, where AR = Auto Regressive term, I = Differencing (due to de-trending) and MA = moving average term

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- **CERLT-S Solution and Approach**
- For our promo, we use Classification based Recommendation / Learning for the Environment factors
- **For the Equity Level needed at a site for Connected Emergency Response,** the Biocentrism in the Emergency Exit/Exit/associated stairway could be in-context related to any of the following:
- 1. Critical Path Method for Emergency Management
- 2. Critical Path Method for Behavioral Health
- 3. Critical Path Method for Public Health
- 4. Critical Path Method for First Responders
- 5. Critical Path Method for Ambulatory Care
- 6. Mitigating or managing LifeScore dynamics

Connected Emergency Response Centre

- **CERLT-S Solution and Approach**
- For our promo, we focus on **Mitigating or managing LifeScore dynamics** by implementing what we call as zero-unplanned effort to use this emergency response assistance.

- We know zero-unplanned effort is important as LifeScore dynamics of the ability of occupants could relate to “not being to run steadily or **f**ast, not being able to use, assist or clasp with hands firmly, not being able to walk down steps/not being able to climb steps easily, not being well to accomplish emergency response, needing to be assisted in mobility, being pregnant, needing to carry a baby, or child or known aged person”.

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- **CERLT-S Solution and Approach**
- For problem solving, we host a Response-strategist that reads the form filled by an occupant/occupant group for a Site_CERC_Assistant, to recommend sense and respond experiences or assistants to accomplish zero-unplanned effort to use the Site_CERC_Assistant. The form includes data such as
- **Site name**
- **Location**
- **Block or Building**
- **Flat, or Facility or Associated Occupancy**
- **Occupant / Occupant Group**
- **LifeScore classifier of ability**
- **Site_CERC_Assistant code (like for the Emergency Exit it is** Site_CERC_Assistant_E_1)

Connected Emergency Response Centre

- **CERLT-S Solution and Approach**
- **Response strategy that is enabled on submission of the form, where the strategy includes**
- [a] vital-mindfulness-pack (numeric value 1)
- [b] vital-mindfulness-guide (numeric value 2)
- [c] vital-mindfulness-forum (numeric value 4)
- [d] vital-mindfulness-pack and vital-mindfulness-guide (numeric value 3)
- [e] vital-mindfulness-pack and vital-mindfulness-forum (numeric value 5)
- [f] vital-mindfulness-guide and vital-mindfulness-forum (numeric value 6)
- [g] vital-mindfulness-pack and vital-mindfulness-guide and vital-mindfulness-forum (numeric value 7)

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- **CERLT-S Solution and Approach**
- **For the promo,** we say that the Response strategy for the Emergency Exit initially includes
- **vital-mindfulness-guide and vital-mindfulness-forum**,
- where the **vital-mindfulness-guide** will guide the occupants on intrinsic preparedness, mitigation, sense & respond inter-relationships so they can use the Emergency Exit in a planned and less difficult manner,
- and where the **vital-mindfulness-forum** enables/ involves occupants of the site to interact and evaluate their problems and solutions via a “Seamless forum”, so a mindful approach is adopted for all inter-relationships that affect occupants in using an Emergency Exit.

Connected Emergency Response Centre

- **CERLT-S Solution and Approach**
- For any vital mindfulness, the data as a LifeScore classifier based strategy is trained or checked for accuracy using logistic regression.

- **For our promo, we recommend Supervised Learning for the Environment factors to report data (key metrics and drivers) that can be converted into a data story via Lexio and a concept called Supervised Learning Ontology (URL: https://narrativescience.com/data-storytelling)**
- **The implementation is planned in the following manner:**
- 1. Define a CERC cloud data warehouse that is integrated to a CERC department
- 2. Let Lexio connect to the CERC cloud data warehouse

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- **CERLT-S Solution and Approach**
- 3. Understand the Context by mapping to the Lexio Ontology and the **data (key metrics and drivers), thereon the Authoring engine determines what is to be written as Connected Emergency Response based on the LifeScore related questions for assistance, Lexio then runs analytics using Natural Language Processing & Generation to come up with a data story**
- **4. Lexio can then deliver briefs or what is to be read next insights**
- **5. Lexio can empower action by recipients or subscribers to comment, further share within occupant groups and request for notification**

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- **CERLT-S Solution and Approach**
- **This creates a data driven culture for Connected Emergency Response and at the next level for** *visual, tactile, auditory experiences via art/art forms/art work/allied innovation.*

- *This is done by empowering every stakeholder, responder, interested party to report data that can then be a data story that can be read and experienced*

Connected Emergency Response Centre

- **CERLT-S Solution and Approach**
- **The Supervised Learning Ontology uses** Process-oriented factors such as the
- [A] Anytime need to use this assistant / innovation for CERC
- [B] Anywhere use of this assistant / innovation for CERC
- [C] Anyhow use of this assistant / innovation for CERC
- [D] Zero-unplanned effort use of this assistant / innovation for CERC

- Our Github contains references to Code snippets as the basic proof of concept for open-source-to-be-developed CERC tools

- THANK YOU