

Licensing and Technology Transfer Opportunity: Manipal University

Title of Technology Available:

A Method For Generation And Identification Of HexResponse Codes

Brief Description of Invention:

This invention is an optimized version of modern-day QR codes and Data Matrix codes. It is based on a hexagonal structure which is geometrically more space-efficient than the squares used in QR codes. This provides all the functionality of QR codes such as scalability of data size (compounding), skew and rotation tolerance, and variability of error correction rates, custom logos, and others.

Brief Background of Invention:

This invention is based upon the need to represent information in a visual format, but easily interpretable by machines via cameras. Presently, this is realized through the aid of inventions such as QR codes and Data Matrix codes. However, while these have been prevalent for the past few decades, they are not geometrically and spatially optimized. This invention proposes the usage of hexagonal structures to better utilize the physical space upon which the code needs to be displayed/printed/projected.

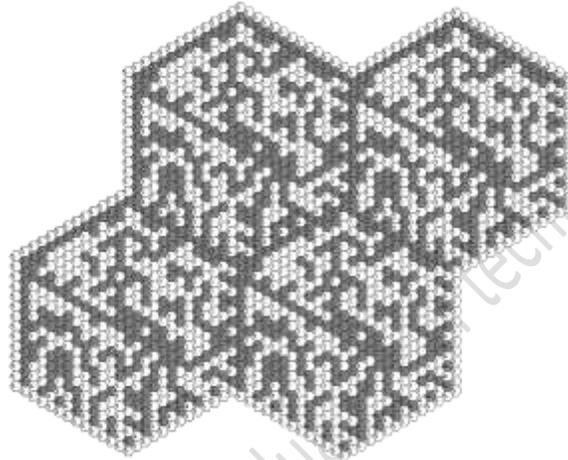
Describe the final product:

The final HexResponse code, or HR code, is capable of the following features:

1. Scalability of data to encode
2. Compounding of large data in visually aesthetic and customizable forms.
3. Skew and rotation tolerance when scanning the HR code with a camera. That is, while scanning this code with a camera, this invention can tolerate the image being skewed/rotated at any angle.
4. Customizable error correction rates. The greater the error correction rate, the greater tolerance for damage of the physical printed HR code (perhaps missing, drawn over, or covered by an obstacle). This implies complete recovery of data with partial visibility of the HR code.
5. Customizable logo in the HR code. Any small image can be placed in the center of the HR code to truly personalize the HR code to an individual or corporation.
6. And other technical advantages.

Technological Domain (Keywords):

Data representation
QR (quick-response) codes
Two-dimensional barcode
Optimization
Hexagonal structure
Honeycomb conjecture
Least perimeter-to-area ratio
Skew/rotation tolerance
Customizability
User-defined logos

Proof of Concept:**Stage of Development:**

~~Ideation/Prototype/~~ Advanced Prototype ~~/Ready to Market technology~~

Provide Information on Competitors who manufacture and/or sell similar products:

QR codes, data matrixes, barcodes

What are the unique advantages your innovation has compared to the competition:

Optimization and conservation of physical space when compared to other code forms.

Ability to incorporate any custom image or logo in the HR code.

Ability to customize error correction levels with greater precision (standard QR codes allow for only four levels)

Ability to compound HR codes in multiple directions, giving possibility to create aesthetically pleasing visualizations. (Proof-of-concept shows compounding in different directions.)

A few potential companies who might be interested in this technology:

Any manufacturing company, car industries, advertisers, mobile security companies, etc.

Intellectual Property Status: Indian Patent application with number _____ **filed in (mention year)**

Application#: 201741026396 and Date of Filing: July 25, 2017