

Streamline Mail Sorting and Delivery with the Universal Address

Xinhang Shen

NAC Geographic Products Inc.

www.nacgeo.com

Challenges

To streamline the sorting and delivery of mail pieces and parcels to all locations in the world faces four challenges:

- How to sort all international mail pieces and parcels automatically,
- How to let machine sort all mail pieces and parcels to final households,
- How to extend postal and courier services to locations without addresses and postal codes,
- How to optimize the transportation routes for mail pieces and parcels.

International Addresses

To automatically sort all mail based on traditional address has to handle international addresses which are

- Dependent on hundreds of languages and scripts;
- Not well defined and formatted;
- Not always unique;
- Not immediately available to new residences;
- Not available to temporary residences such as campsites;
- Not defined yet in some countries

Postal Codes

To automatically sort all mail based on postal codes also has problems as postal codes are

- Defined differently in different countries,
- Not defined for individual households,
- Not defined in temporary locations,
- Not available immediately in newly built houses and buildings,
- Frequently changed due to redevelopment,
- Not defined in all countries,
- Still not independent from traditional addresses.

Difficulties

It is not feasible to develop automatic sorting systems to sort all mail and parcels from world level to final households based on traditional addresses and postcodes as there are so many difficulties:

- **Hundreds of languages and scripts,**
- **Hundreds of address definitions and formats,**
- **Hundreds of differently defined postal codes,**
- **Households without addresses and postal codes in many countries and locations,**
- **No individual postal codes for households,**
- **Frequent changes in addresses and postal codes.**

UPU Recommendation

Although UPU has published some recommendations for writing the address for international mail, they are mainly for manual sorting rather than machine sorting and can't solve all the problems of the addresses and postal codes.

MR. OMAR HUSSAIN

P.O. BOX 111

DUBAI

UNITED ARAB

السيد عمر حسين

ص.ب. 111

دبي

الإمارات العربية المتحدة

New Solution

Instead of standardizing the hopeless traditional addresses and postal codes in the world, a new solution is proposed based on the Universal Address which can solve all the problems of traditional addresses and postal codes as it is:

- **available at all locations (houses, buildings, cottages, campsites, oil platforms, etc) in the world,**
- **not needed to be assigned and maintained,**
- **language and script independent,**
- **highly efficient,**
- **unique worldwide.**

Where to Get Universal Address

Since Universal Addresses are mathematically equivalent to longitude/latitude, they can be obtained through many different channels such as

- GPS receivers,
- Online high resolution satellite image maps,
- Printed maps with the Universal Map Grids,
- Online geocoding services,
- Yellow page listings,
- Local search engines, etc.

Sample Universal Addresses

Here are some sample Universal Addresses obtained from www.nactag.info which need only 8 characters but can accurately represent their locations:

- Deutsche Messe [HSHM RPLM](#)
- Eiffel Tower [H5Q2 R48Q](#)
- Buckingham Palace [GZM7 RKH3](#)
- Sydney Opera House [WL13 9BPG](#)

Location
[NAC](#) ("8K PG", "8KDB PGFD"), address ("1708 L St NW, Washington, DC"), city ("New York, NY"), POI ("United Nations, New York, NY") or ZIP ("12345")

At the cursor point: NAC: HSHQ1 RPLJR Longitude: 9.80979323387146 Latitude: 52.323727338924236



Location
[NAC](#) ("8K PG", "8KDB PGFD"), address ("1708 L St NW, Washington, DC"), city ("New York, NY"), POI ("United Nations, New York, NY") or ZIP ("12345")

At the map center: NAC: H5Q2G R48QH Longitude: 2.2944444444444514 Latitude: 48.85833333333336



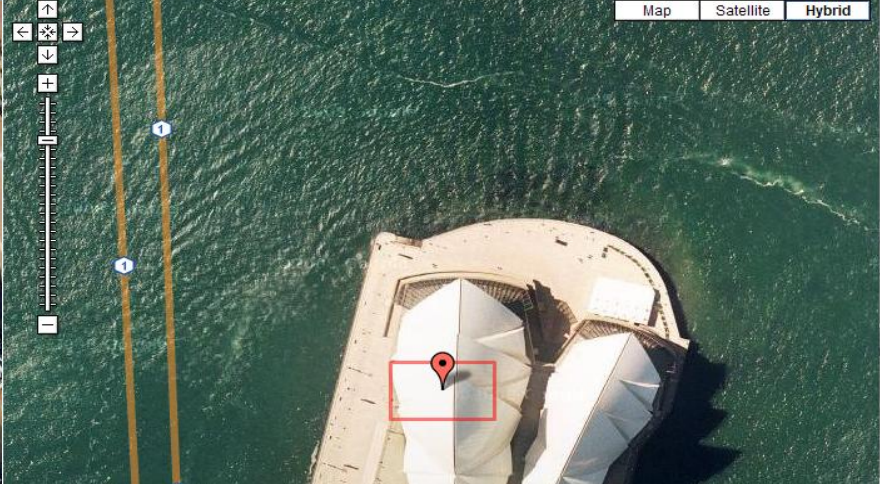
Location
[NAC](#) ("8K PG", "8KDB PGFD"), address ("1708 L St NW, Washington, DC"), city ("New York, NY"), POI ("United Nations, New York, NY") or ZIP ("12345")

At the map center: NAC: GZM7H RKH3G Longitude: -0.1433333333333087 Latitude: 51.5007777



Location
[NAC](#) ("8K PG", "8KDB PGFD"), address ("1708 L St NW, Washington, DC"), city ("New York, NY"), POI ("United Nations, New York, NY") or ZIP ("12345")

At the map center: NAC: WL13H 9BPGH Longitude: 151.2148888888889 Latitude: -33.8567777777777



Suggested Enhancement

Instead of replacing the traditional mailing address, the Universal Address shall be added as part of the mailing address as it has only 8 or 10 characters and can be neatly aligned with the traditional address in any language:

Mr. James Smith
4168 Finch Ave. E.
Toronto, ON M1S 5H6
Canada
NAC: 8CRB Q90H

中国杭州下城区悠闲新居
八号楼1单元303室
NAC: T0DH N1DW
张小二先生收

السيد عمر حسين
ص.ب. 111
لدي
الإمارات العربية المتحدة
NAC: ML84 M6BM

Streamline Mail Sorting

Since the Universal Address represents the exact location, any sorting system able to recognize the Universal Address can sort every mail piece or parcel in the world:

- for international mail, sort the mail to the nearest IMPC based on its exact location, urgency and volume of similar mail;
- for domestic mail, sort the mail to the province, city, post office, carrier bag and household mailbox.

Extend to All Locations

Since every location has its Universal Address, postal and courier services can be easily extended to all locations in the world including:

- new houses without addresses and postcodes assigned yet,
- temporary locations such as campsites, cottages, oil platforms, construction sites, etc,
- countries which do not have address and postal code systems at all.

Optimize Transporting Routes

Unlike postal codes which only represent the fixed delivery nodes on the distribution structure of postal services, Universal Addresses have contained the exact location information of the destinations.

With Universal Addresses, postal and courier companies can easily group mail pieces and parcels according to their locations, volumes, urgencies and available transportation means to optimize their transporting routes.

Streamline the Delivery

Moreover, letter carriers can use Universal Addresses instead of street addresses to specify destinations on their navigation systems to

- reduce 80% of key input;
- avoid difficulty inputting addresses with foreign characters;
- eliminate errors from missing, outdated and duplicated addresses;
- Extend the services to locations without street addresses.



Universal Address Has Multiple Uses

Unlike postcodes which is designed mainly for postal services, the Universal Address is equally useful to all location users:

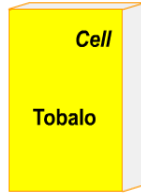
- Courier, delivery and taxi services;
- Ambulance, firefighting and police services;
- Local residents and tourists;
- Mapping, local search, navigation and geographic information systems;
- Identifying and physically locating properties and roadside objects.



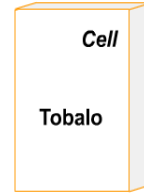
Displayed on GPS watches and cellphones to make accurate location as easy to use as accurate time



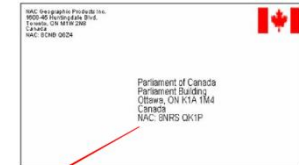
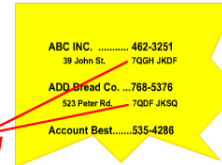
Specify locations on GPS navigation systems



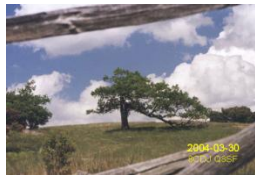
Listed on telephone books to enhance location information



Universal Addresses



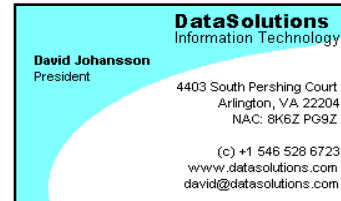
As Global Postal Codes to sort all mail from world level to final mailboxes automatically



As location of photographs



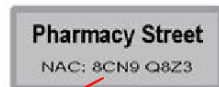
Identify sewage exits, fire hydrants, parking meters, etc



Fit business cards

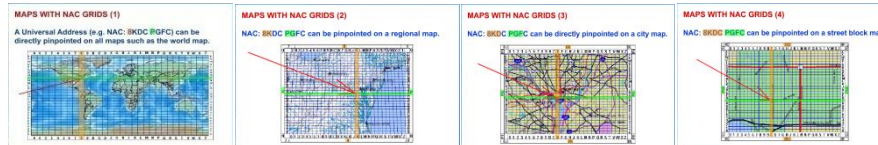
CITY OF NORTHAMPTON NORTHAMPTON, MA PARKING DEPARTMENT		
PARKING VIOLATION		
TICKET NUMBER	ISSUE DATE / TIME	
N100010587	01/13/01 15:16	
STATE REGISTRATION#	REGISTRATION TYPE	
CT 47MHL	PASSENGER	
VEHICLE MAKE	VEHICLE COLOR	
TOYOTA	GREEN	
VOL. CODE	VIOLATION DESCRIPTION	METER #
23	METER VIOLATION	449
LOCATION OF VIOLATION	PAYMENT DUE DATE	
NAC:7GHFL Q8DFG	02/03/01 4:00pm	
ORIGINAL FINE	PENALTY:	
\$ 10.00	IF PAID AFTER 21 DAYS OF ISSUE DATE, A \$5.00 PENALTY IS ADDED TO ORIGINAL FINE. WHEN THE REGISTRAR OF MOTOR VEHICLES HAS BEEN NOTIFIED, THE PENALTY SHALL BE \$30.00 PLUS THE ORIGINAL FINE. ALL NOTICES ARE MAILED TO THE LAST ADDRESS THE REGISTRAR HAS ON FILE AT TIME OF VIOLATION.	
You are hereby charged with Violating Chapter 90, Article 1 through 121 of the Northampton City Code, or any of the following Sections of the Massachusetts Vehicle and Traffic Law G.L. Chapter 90, Sec. 26A-12 as amended.		
UNIT #	BADGE #	OFFICER SIGNATURE
01	M3	R. LAMILLA

Represent locations of cars, crime sites, accidents, potholes, etc



Result about 140 m west and 125 m north

Destination at NAC: 8CN5 Q8Z8



The coordinates of Universal Map Grids and can be directly pinpointed on all kinds of maps

Universal Property Identifiers



Universally Identify properties all over the world

Marked on street signs for estimating distance & direction to any destination

Summary

- **Universal Addresses can be used to streamline the sorting of all mail and parcels in the world;**
- **Universal Addresses provides the flexibility for optimizing transporting routes for mail and parcels based on their locations, volumes and urgencies;**
- **Universal Addresses make postal and courier services be easily extended to locations without traditional addresses and postal codes anywhere in the world;**
- **Universal Addresses can help letter carriers to efficiently and reliably locate the final destinations of mail and parcels.**

Thank You for Your Attention!

For more information about
The Universal Address, please go to
<http://www.nacgeo.com/nacsite/>

Or email to

xshen@nacgeo.com