

La Calidad de la Información Geoespacial Digital, sus Limitaciones, y su Impacto en las Personas y la Vida Diaria

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Servicio Geológico Minero Argentino
Jornada sobre Calidad de la Información Geoespacial - UNLP
19 septiembre de 2016



IDERA

Infraestructura de Datos Espaciales
de la República Argentina

Aspectos de la Calidad de Datos Digitales

- **Exactitud Temática**
 - Parámetro relacionado a la descripción del objeto geográfico.
- **Consistencia de la Información**
 - Conservación de las Relaciones Espaciales
 - Coherencia topológica
- **Compleitud**
 - Todo lo que tiene que estar digitalizado, está digitalizado?
- **Escala, Objetivos de la Información, Precisión y Exactitud.**
- **Documentación, Metadatos**

Cuál es el Impacto de la Calidad de los Datos en una IDE?

La calidad de datos en una IDE nos tienen que permitir:

- Poder utilizar la información para propósitos generales.
- Contar con información fidedigna y calificada.
- Realizar consultas de la base de datos en forma consistente.
- Poder integrar información de distintas fuentes sin que existan inconsistencias o conflictos graves en la información.
- Permitir realizar análisis geoespaciales dentro de los límites fijados por los metadatos.

En definitiva, hacer un uso seguro de la información

Ahora,

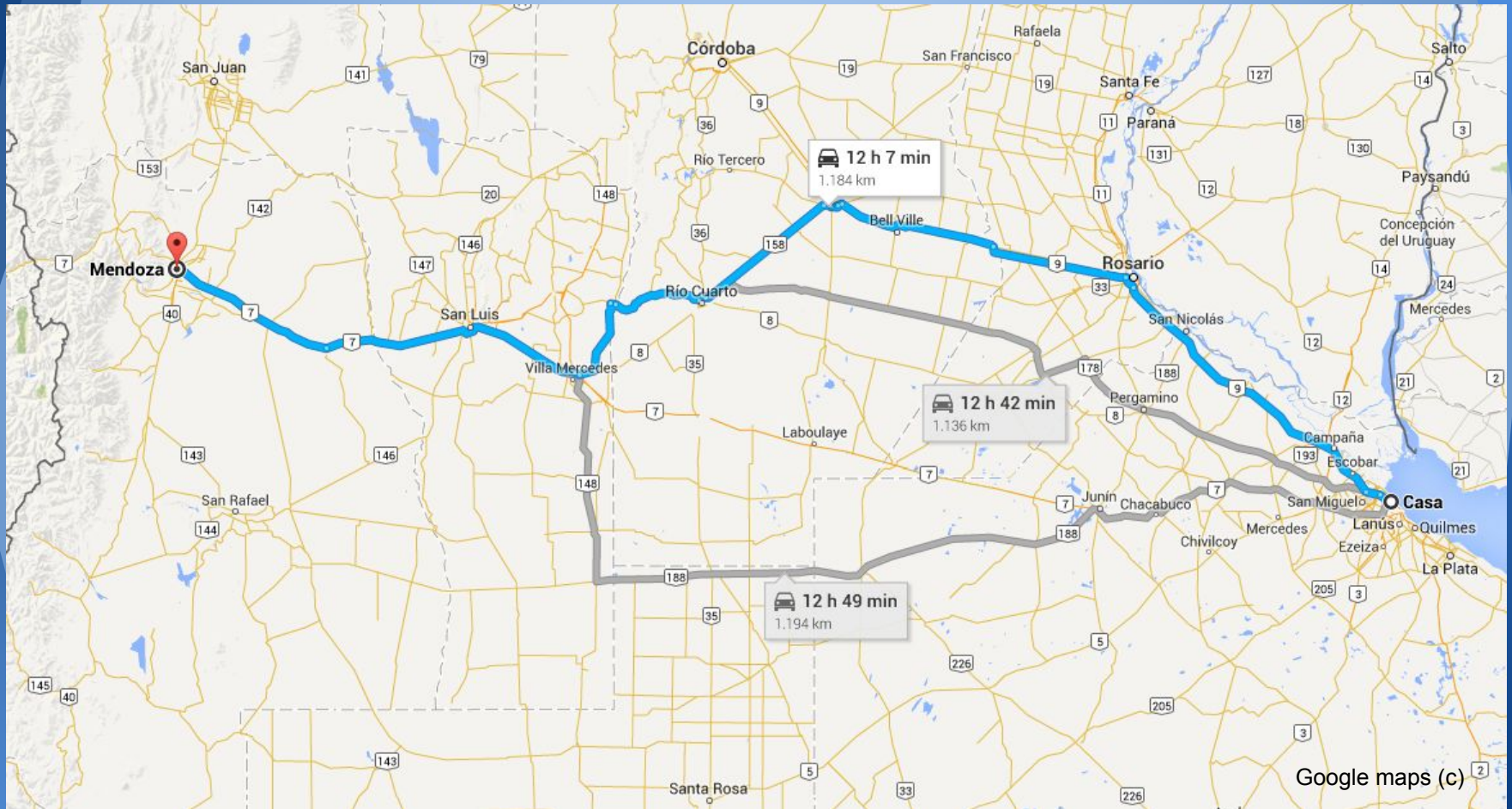
¿Somos conscientes del impacto de la calidad de los datos digitales sobre el uso que hace la sociedad?

¿Cuáles son nuestras responsabilidades como productores de información?

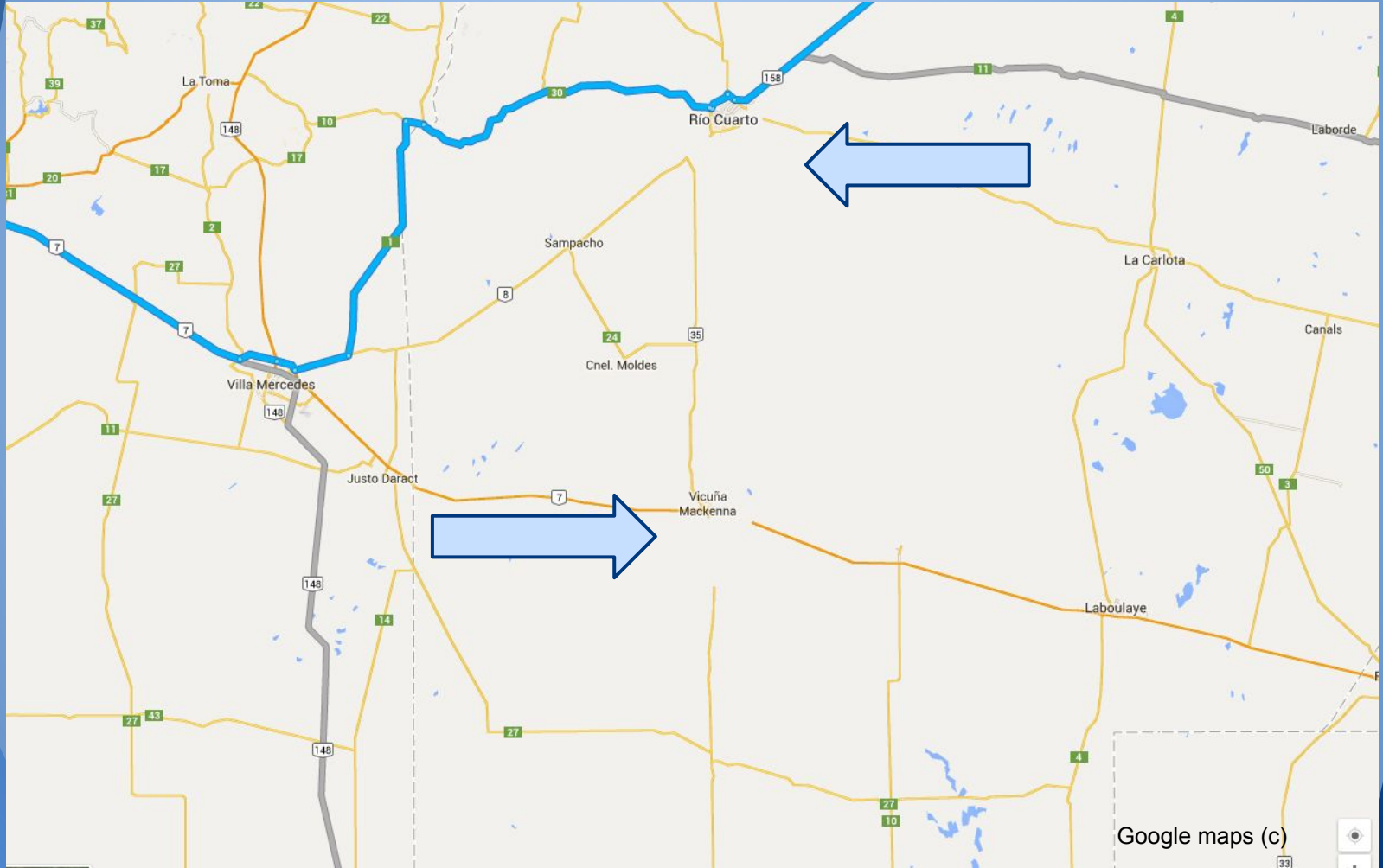
Repasemos algunos casos de problemas generados por la información cartográfica digital



Qué Paso????



Qué Faltó?



Le hizo
caso al
GPS.
Ignoró las
señales
de
tránsito

Gabriel Asato, 2016

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UPCOMING: Engadget Expand starts Friday: Prepare yourselves, people!

Faith in GPS sends Mercedes downstream

by Donald Melanson | @donmelanson | March 27th 2007 at 10:14 am

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So far, over-dependence on GPS devices has resulted in more inconvenience than actual danger, but things took a turn for the worse earlier this month when a U.K. woman sent her £96k Mercedes SL500 flying into a river, trusting the car's optimistic GPS guidance instead of the road signs warning of impending doom. Matters were made worse as the river was swollen from recent heavy rains, which caused the vehicle to be swept some 200 meters downstream before the woman was able to escape. While she emerged unscathed, the car unfortunately wasn't quite so lucky, remaining stuck in the river for a week after the incident and now believed to be a complete write-off.

Via The Register

FEATURE

Five qu...
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14 hours a

La Interpretación de los Datos y las Limitaciones Propias de la Información

6 Bus Driver Follows GPS, Gets Wedged Under



This one is kind of scary. Don't do it, and you have kids who will do it for you, or if you live someplace where you maybe skip it (and be careful, because you are in the mood for a n

In April of 2008, a bus driver from a team ignored the basic law of physics and common sense when he plowed into the Washington Park Arboretum.

because why else would they have a selecti



In October of 2006, an elderly German couple made a decision to ignore a "closed for construction" sign in Hamburg. Why? Why on earth? The 80-year-old man decided to follow his GPS directions to the letter.

The man and his wife were lucky to escape. They were shot past an enormous warning sign and a sand pile.

And before you ask: yes, he was also driving a

German Driver Obeys GPS, Drives Into Sand Pile

UK Motorists Follow GPS, Get Stuck on Narrow Roads



In the tiny villages and towns around Winchester, UK, motorists have had problems with GPS navigation. They follow the route that the GPS suggests and repeatedly wind up stuck -- the roads are simply too narrow for some wider vehicles.

The problem got so bad in the town of Exton that a bright yellow sign was erected to warn drivers NOT to follow their GPS and to, instead, use common sense. These are the times we live in, folks.

Falta Cerebro y Hay Excesiva Confianza en la Tecnología

The Role of Trust and Interaction in GPS Related Accidents: A Human Factors Safety Assessment of the Global Positioning System (GPS)

Chris. W. Johnson, DPhil; Department of Computing Science, University of Glasgow, Scotland, UK.

Christine Shea, PhD; ESR Technology Ltd, Birchwood Park, Warrington, Cheshire, UK.

C. Michael Holloway, NASA Langley Research Center, Hampton, VA, USA

Keywords: GPS; human error; accident analysis; organisational safety.

Abstract

The Global Positioning System (GPS) uses a network of orbiting and geostationary satellites to calculate the position of a receiver over time. This technology has revolutionised a wide range of safety-critical industries and leisure applications ranging from commercial fisheries through to mountain running. These systems provide diverse benefits; supplementing the users existing navigation skills and reducing the uncertainty that often characterises many route planning tasks. GPS applications can also help to reduce workload by automating tasks that would otherwise require finite cognitive and perceptual resources. However, the operation of these systems has been identified as a contributory factor in a range of recent accidents. Users often come to rely on GPS applications and, therefore, fail to notice when they develop faults or when errors occur in the other systems that use the data from these systems. Further accidents can stem from the 'over confidence' that arises when users assume automated warnings will be issued when they stray from an intended route. Unless greater attention is paid to the human factors of GPS applications then there is a danger that we will see an increasing number of these failures as positioning technologies are integrated into increasing numbers of applications.

La Calidad de los Datos Digitales Tiene Derivaciones de Responsabilidad Institucional

Estas mujeres
pudieron haber
muerto por
errores en la
información
digital

Gabriel Asato, 2016

MailOnline News

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Three women recount how they were lost in Death Valley for THREE DAYS after GPS error

By SNEJANA FARBEROV
PUBLISHED: 05:43 GMT, 15 March 2013 | UPDATED: 05:48 GMT, 15 March 2013

What started out as a day trip to a local museum ended up nearly costing three women their lives when they say their GPS had led them astray and left them stranded in California's Death Valley for three days.

Donna Cooper, her daughter Gina and a friend, Jenny Leung, told ABC News' 20/20 that on a balmy July day in 2010, they packed their car with enough provisions for the day and headed for Scotty's Castle's, an attraction in Death Valley National Park.

With the help of their seemingly trusty GPS, nicknamed 'Nell' by Donna Cooper, they reached the museum, spent several hours there and then got back into their Hyundai to go home.

Day trippers: Donna Cooper, left, and her daughter Gina, right, nearly died in Death Valley after getting lost thanks to their GPS on their way home from a local museum

EXCLUSIVE: 'He's distraught, he wanted to get back together': Nicola McLean enjoys a friendly catch up with her estranged husband Tom Williams at bar

EXCLUSIVE: 'I could tie my boobs around my waist like a belt!' Tina Malone shows off her saggy excess skin after dramatic 11 stone weight loss. Plans £50,000 surgery

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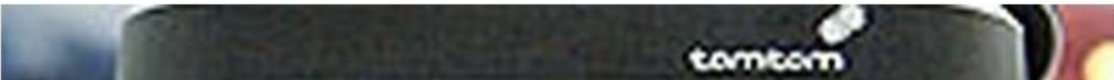
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SatNav danger revealed: Navigation device blamed for causing 300,000 crashes

Jul 21, 2008 00:00 | By [Mirror.co.uk](#)

Road safety chiefs last night warned of the dangers of satnavs after figures blaming them for 300,000 smashes and near prangs.

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Nicaragua invade Costa Rica a Causa de un Error en Google maps

Una Invasión Causada por Usar Mapas NO OFICIALES

The Telegraph

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Google maps error sparks invasion of Costa Rica by Nicaragua

Nicaragua has used an error on Google's internet maps system to justify an invasion of Costa Rica.

f 423 t 83 p 0 in 0 s 506 Email



Nicaraguan troops planted a flag on Costa Rica's Calero Island Photo: REUTERS

By Jon Swaine in New York
9:00PM GMT 08 Nov 2010

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In Nicaragua



Daniel Ortega,
President of
Nicaragua

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The New York Times News Blog

The Google Maps War That Wasn't

By ROBERT MACKEY NOVEMBER 19, 2010 8:40 AM 17 Comments



Esteban Felix/Associated Press Nicaraguan Troops Remain in Costa Rica, but Why?
Nicaraguan troops are still hunkered down on an island across the country's border with
Costa Rica.

Erró el ZOOM en el Mapa Digital

VOLVO OCEAN RACE 2015



Causas del Accidente:

...”deficient use of electronic charts and other navigational data and a failure to identify the potential danger, and deficient cartography in presenting the navigational dangers on small and medium scale (or zoomed out) views on the electronic chart system in use.”

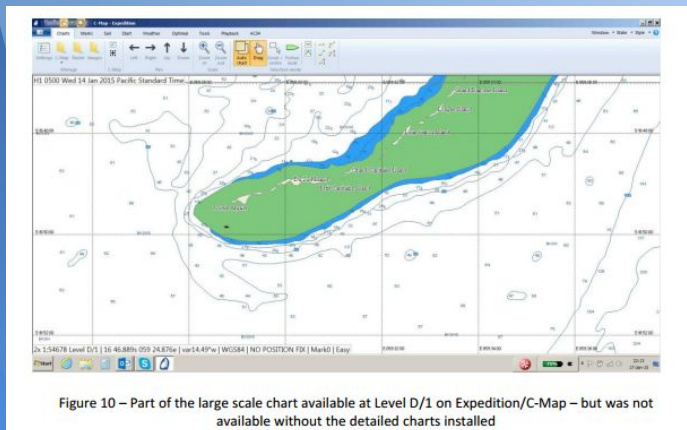


Figure 10 – Part of the large scale chart available at Level D/1 on Expedition/C-Map – but was not available without the detailed charts installed

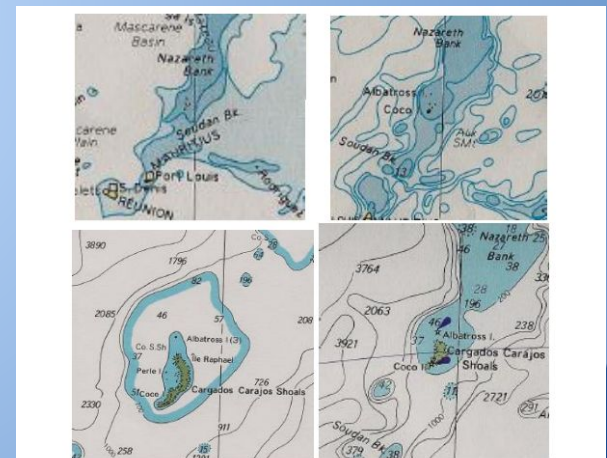
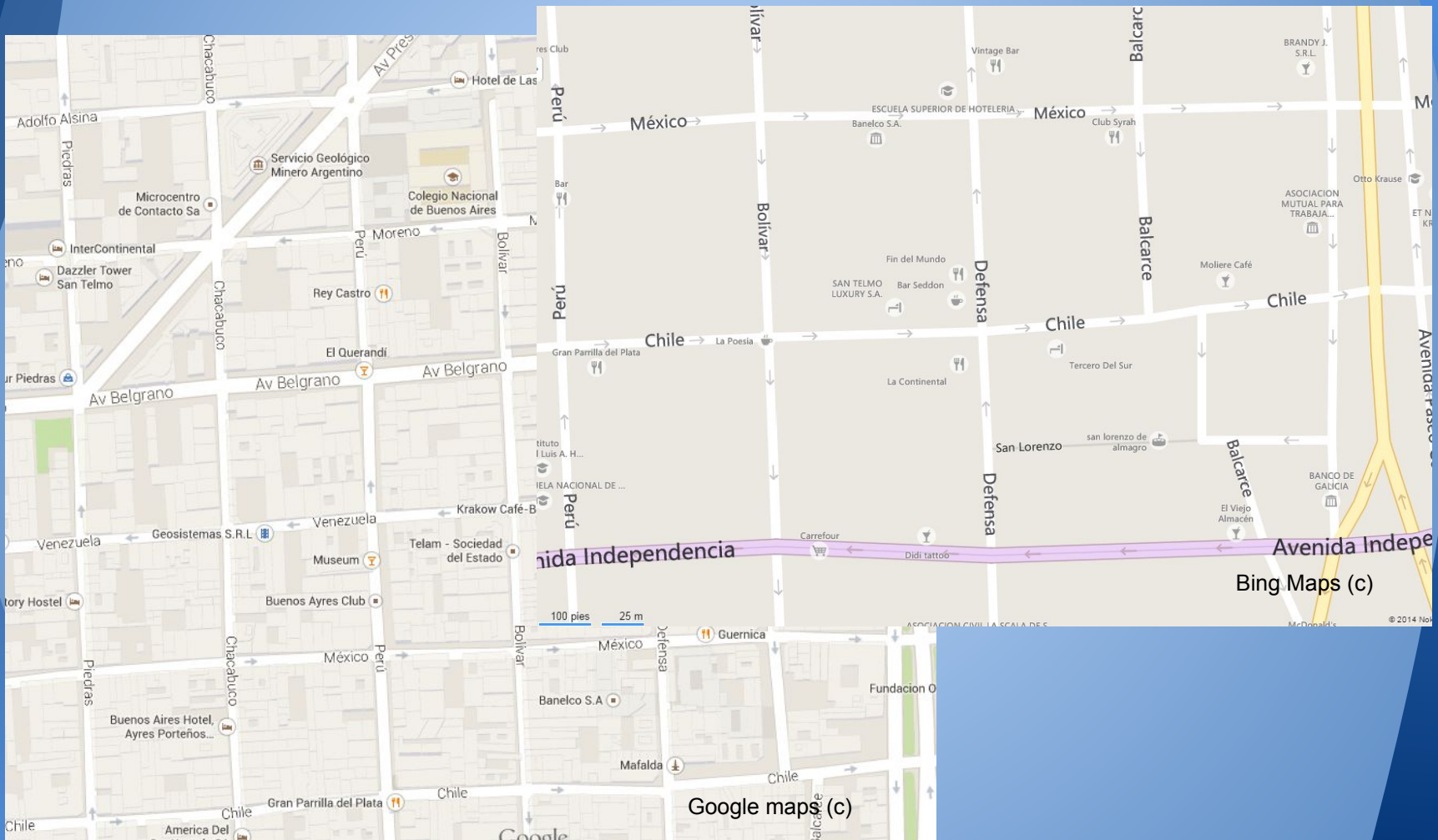


Figure 8 – A collage of official paper chart presentations of the Cargados Carajós Shoals – From top left hand corner clockwise 1:45 Million (UKHO 4000); 1:20M (UKHO 4005); 1:10M (UKHO 4070); 1:3.5M (UKHO 4702)

...”he (navigator) did not zoom in and so gain access to the large scale chart of the dangers”

Que pasa con la Responsabilidad Institucional en la Toma y Uso de Datos con Instrumental no Apropiado



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Hacer un uso seguro de la información

Conclusiones

Se debe garantizar el uso seguro de la información

- A través de buenas prácticas de toma de datos.
- A través de modelos de datos que permitan consultas correctas.
- Asegurando la completitud de datos esperada.
- Definiendo las limitaciones de los datos y aplicaciones (disclaimer).
- Proveyendo soporte a los usuarios (por ejemplo a través de programas educativos).
- Recordando a los usuarios que los automatismos no los eximen de aprender a utilizar adecuadamente los datos y aplicaciones.

Gracias!!!

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