



# Mountain bike trail signposting with EGNOS

EGNOS workshop 2019

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# What is IMBA?

- From a legal perspective IMBA is a non-profit association.
- It is the largest mountain bikers' association in the world.
- It was founded in 1988 in California (US).
- At present, IMBA's worldwide network includes Chapters in 5 continents.
- At European level, IMBA Europe is an umbrella association comprising 22 countries, including IMBA Spain.





# Goals of the association

- Advocacy for the rights of mountain bikers.
- Restoration and maintenance of mountain pathways and trails that have disappeared for lack of use.
- Georeferencing of such paths and trails.
- Trails signposting.
- Implementation of the programme *'More trails close to home'*.

# Who do we work with?

- The National Geographical Institute of Spain (IGN).
- The National Center for Geographic information (CNIG).
- The Spanish Bicycle Board (MEB).
- Regional and Local Authorities.



# Our activities

- Advocacy work for mountain bike with National, Regional and Local Authorities.
- Organization of environmental education and awareness-raising seminars for mountain bikers.
- Participation in forums related to sustainable active tourism and its promotion.
- Design, implement and promote signposted routes for MTB throughout Spain.
- Delivery of training courses for MTB trail signposting experts.



# Trail sign-posting

- At a developer's request, we design MTB routes.

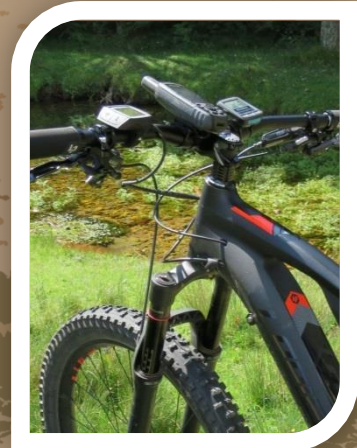
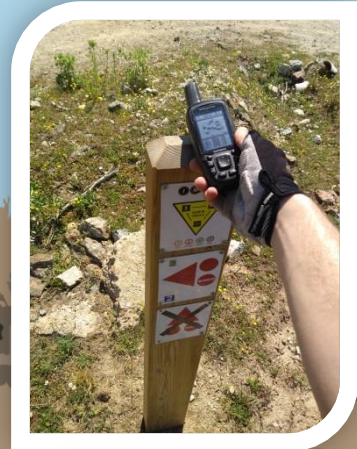


- We check that the trails involved are publicly-owned.
- We request permissions from Environmental Authorities for right-of-way access.
- We create the tracks of the routes by using a GPS device enhanced with EGNOS.



# Field work

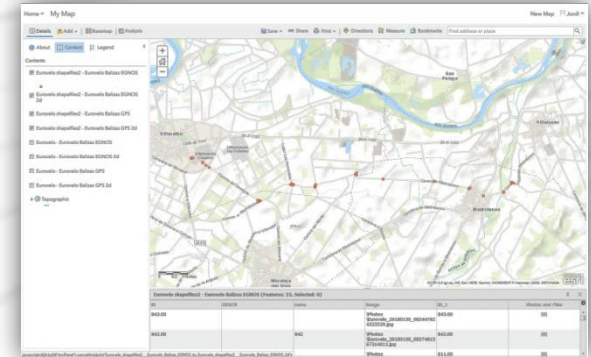
- Routes are georeferenced with GPS tracking.
- Every location that entails further work is georeferenced.
- The situation of every signpost and mark is georeferenced.





# Office work

- Data obtained from a GPS/EGNOS device are loaded into mapping software.
- Accurate georeferencing of every feature is essential to obtain the desired result.
- Time saved by using EGNOS entails greater professional efficiency.



## GPS vs EGNOS

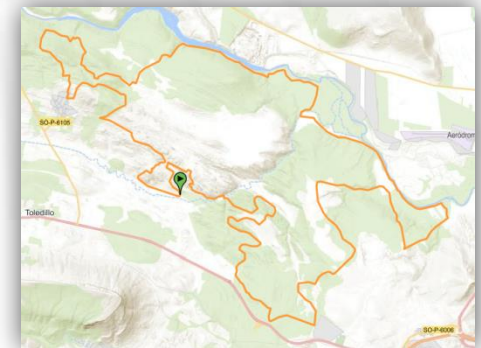
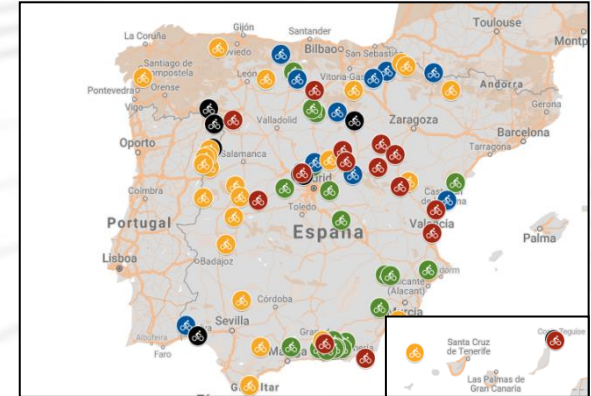
2,35m

1,04m



# Work and projects undertaken

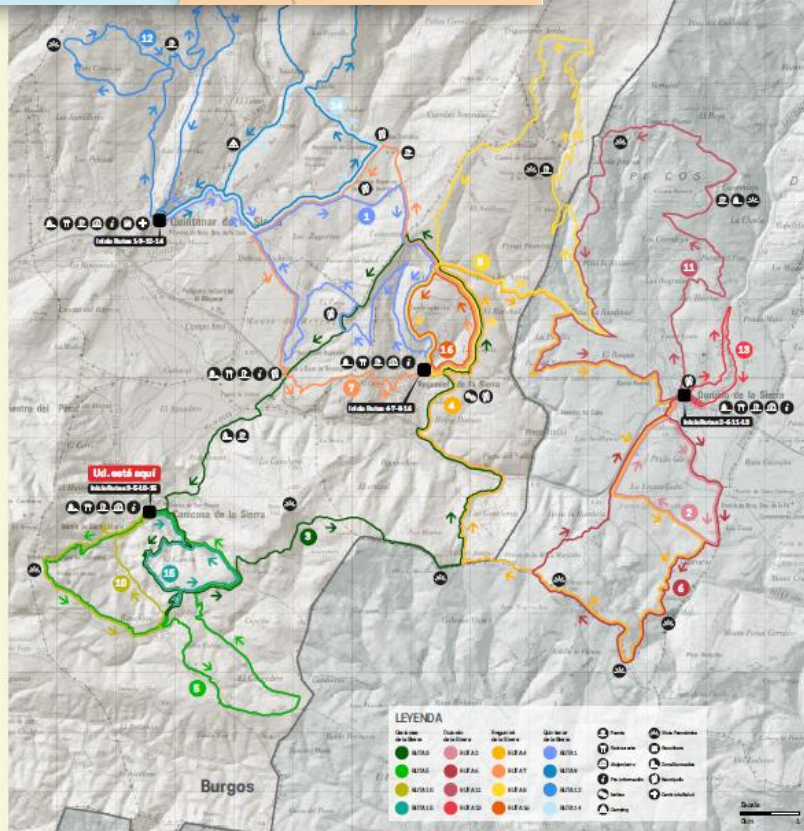
- To date, IMBA has implemented 90 trail sign projects: almost 36,000 km of georeferenced signposted routes.
- IMBA designs signposted routes and also routes to be followed by using GPS tracks.
- GPS tracks are more advisable for areas with high environmental protection, to avoid impact on landscape.







# Canicosa de la Sierra



## RECOMENDACIONES

**Medicina delimitada** es una medicina que define a "Mujeres y sus niños" como la única familia a la que atiende. Este tipo de medicina se basa en la idea de que la familia es el núcleo central de la vida humana. El propósito de la medicina delimitada es proporcionar a las mujeres y sus niños la mejor atención médica posible. La medicina delimitada se basa en la idea de que la familia es el núcleo central de la vida humana. El propósito de la medicina delimitada es proporcionar a las mujeres y sus niños la mejor atención médica posible.

[illegible]

Did it take longer to pass or to frame someone else. La femme qui la porte le rendait un  
 châtiment et peut-être que si on ne s'en souvient pas. Mais elle l'a gardé car elle s'en  
 souvient elle seule et elle l'a gardé car elle ne l'a pas oublié.

second number indicates the percentage. The shaded column gives the grade which is the same as the first.

De nuevo se desbaran sus. No siguen las ideas ni se le hacen críticas de la real-  
mente y se desbaran las cosas que se piden a la vida. No se obtienen más cosas.  
De nuevo se desbaran. Como si fuera una vida que se desbaran. La se desbaran.

**IN DIE DEUTSCHEN SPRACHE**

Das Publikum wird durch den Vortrag in die deutsche Sprache eingeführt. Die deutsche Sprache wird durch den Vortrag in die deutsche Sprache eingeführt. Die deutsche Sprache wird durch den Vortrag in die deutsche Sprache eingeführt.

De voorafgaande manier, met een waarde van 1 op x en een negatieve x, de laatste twee y-waarden, wordt de laatste y-waarde berekend. Het resultaat wordt toegevoegd aan de laatste y-waarde van de vorige iteratie. Het resultaat wordt toegevoegd aan de laatste y-waarde van de vorige iteratie. Het resultaat wordt toegevoegd aan de laatste y-waarde van de vorige iteratie.

[illegible]

De vraye nouveauté l'œuvre se place du côté de la fiction et des romans sociaux.

Sei il più felice

112





# Where do our tracks go?

- The official mapping of the National Geographical Institute of Spain (IGN).
- The MTB trail routes section in our website.
- The websites of MTB riding centres.
- IMBA's section in Wikiloc.

# How does IMBA benefit from the use of EGNOS system?

Substantial improvement  
in data collection

Time saving in data  
processing

Increased measurement  
accuracy

Enhanced safety for riders

EGNOS is a technological advance that lends prestige to our  
work

# As a result of the above:

- The use of EGNOS system is now compulsory for IMBA trail signposting experts.
- Our Technical Manual has been amended to include EGNOS (2019 edition).
- The use of EGNOS system has been included in our training courses for trail signposting experts.



EGNOS system has been presented to our European and American associates (IMBA Europe Summit 2019, Silkeborg, Dinamarca)





# EGNOS

- helps us.
- improves our work.
- offers us accuracy and security.
- provides us with technical skills.

This user-friendly technology launches us towards the future.



# Thank you for your attention

- For further information, please contact us at:

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