

# ROLE OF GEOSPATIAL CONTENT SYNDICATION IN LOCATION- BASED SERVICES DEVELOPMENT

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# Content of presentation

- Introduction
- Navigation and location-based services
- Geospatial data quality
- Geospatial content syndication
- Geospatial content syndication for navigation and LBS
- Internet Notices for Mariners (INM) – a case study
- Conclusion and further development

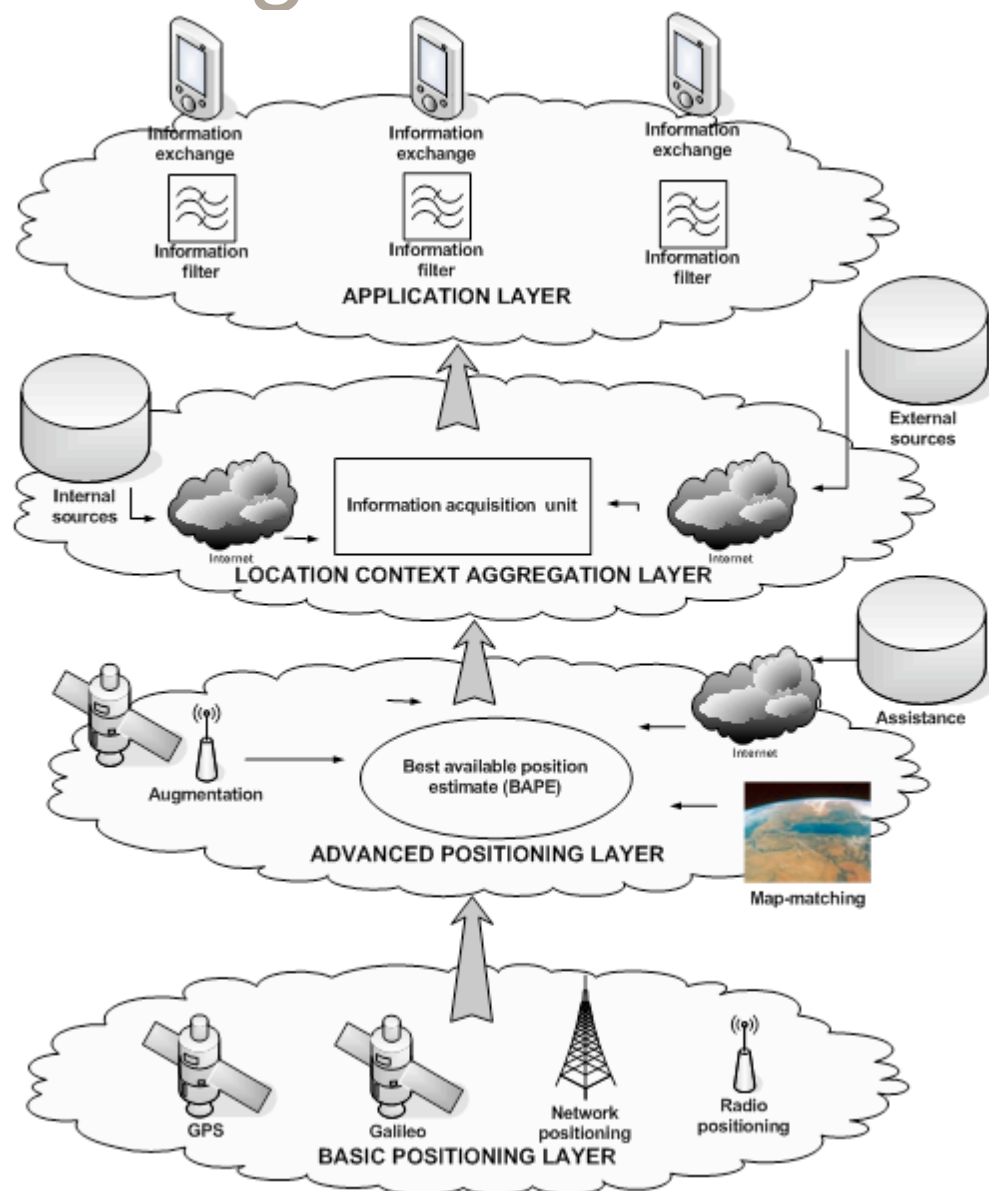
# Introduction

- LBS as the synergy between position estimation, location context and mobile communication
- Pronounced problem of reliable and accurate location (geospatial) content provision
- New internet-based technologies and tagging content with location data provide a framework for development of the new class of navigation and location-based services

# Navigation and location-based services

- Navigation services – provide services and position-related geospatial content aimed to improve situation awareness to navigators
- Location-based services – comprises much broader class of telecommunication services that provide geospatial content and assistance to general users in regard of their position
- Inaccuracy and age of geospatial data erode applicability and general quality of navigation and location-based services

# Navigation and location-based services



**APPLICATION LAYER**

**LOCATION CONTEXT  
AGGREGATION LAYER**

**ADVANCED POSITIONING  
LAYER**

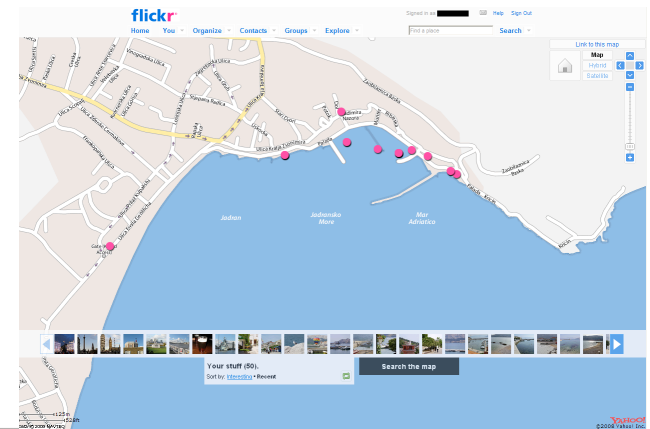
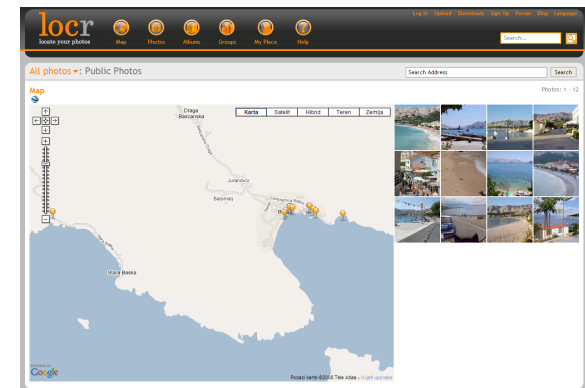
**BASIC POSITIONING  
LAYER**

# Geospatial data quality

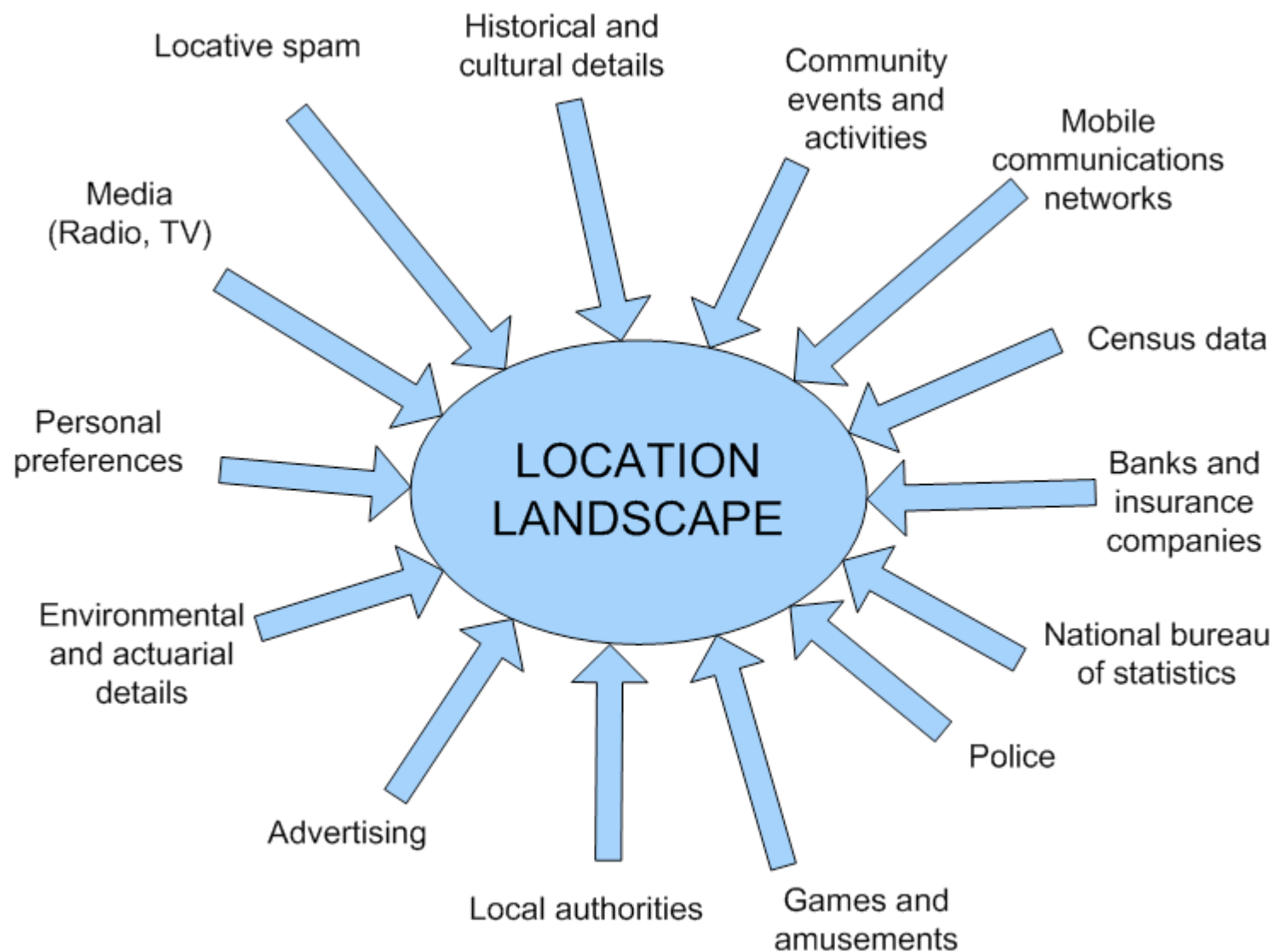
- Geospatial data quality can be described by several parameters:
  - Reliability of data
  - Reliability of content provider
  - Age of data
  - Accuracy of data
  - Availability in near-real time
- The role of social networking (community-generated) content

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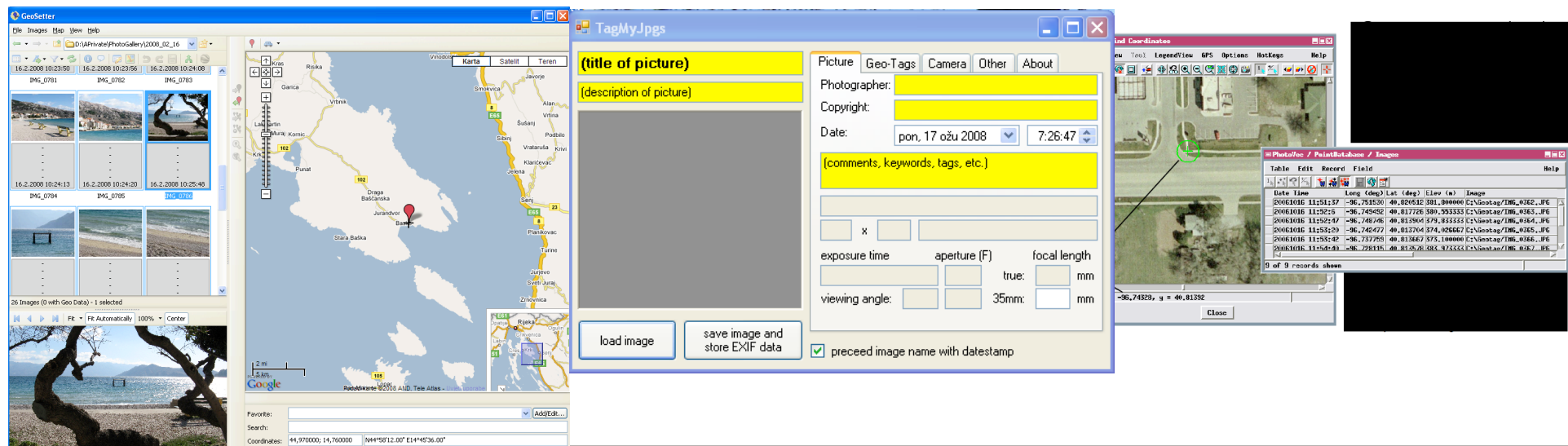
# Geospatial data quality





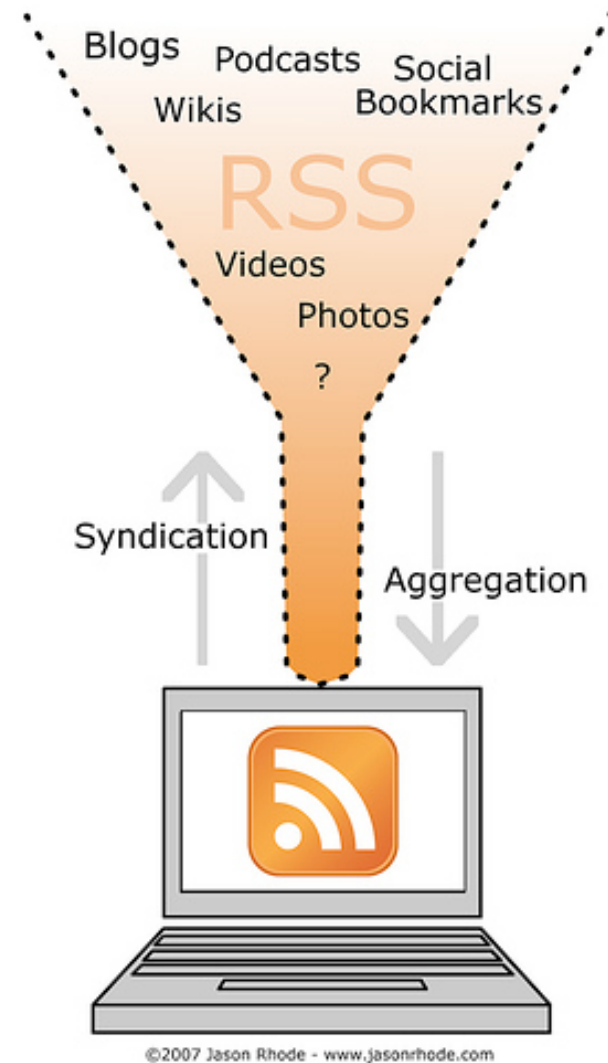
# Geospatial data quality

- Geo-tagging – embedding position-related information in geospatial content
- Various computer files can be embedded with the information of their geospatial origin, or relation to geospatial object (example: photo geo-tagging using EXIF standard)



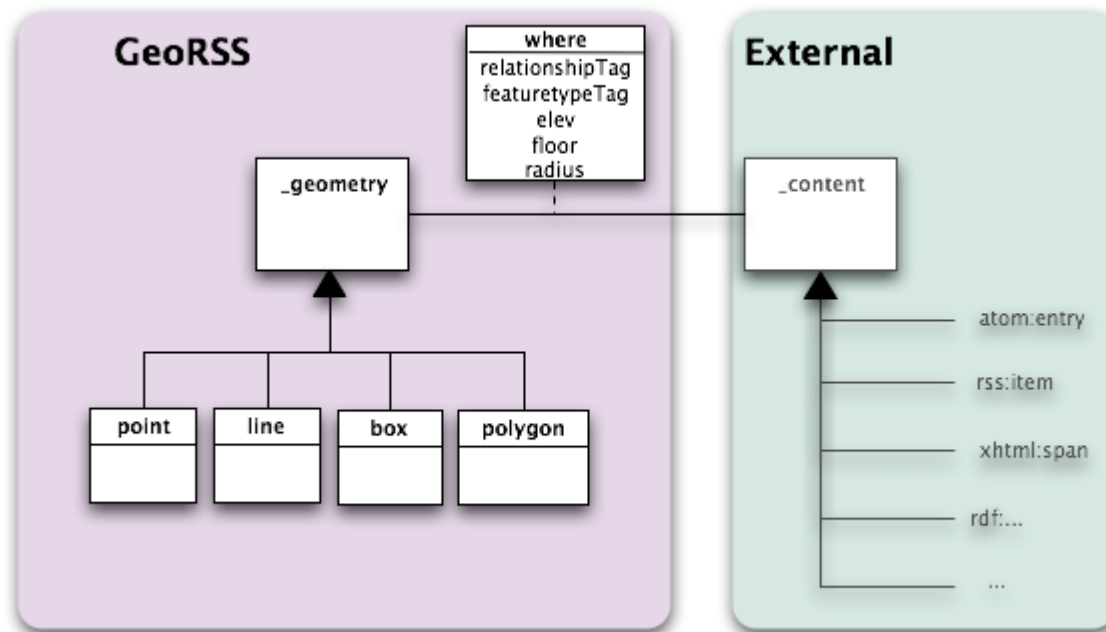
# Geospatial content syndication

- Syndication – a form of broadcast or publishing a web material to a number of receivers through notifying subscribers of recently added content
- RSS – Really Simple Syndication – subscriber notification of any new web-based content
- GeoRSS – subscriber notification of new location-related web-based content (photos, videos etc.)



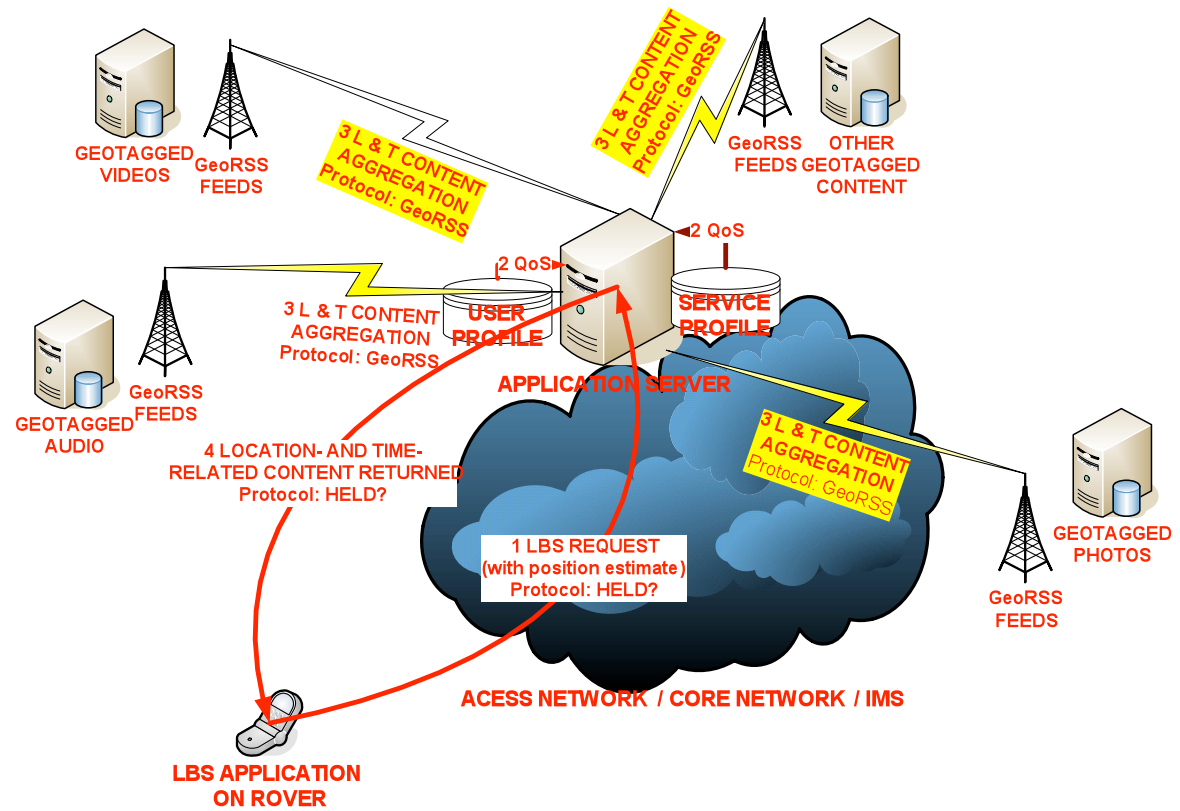
# Geospatial content syndication

- GeoRSS – developed and standardised by community of internet developers
- Growing number of application services, including geospatial RSS web search



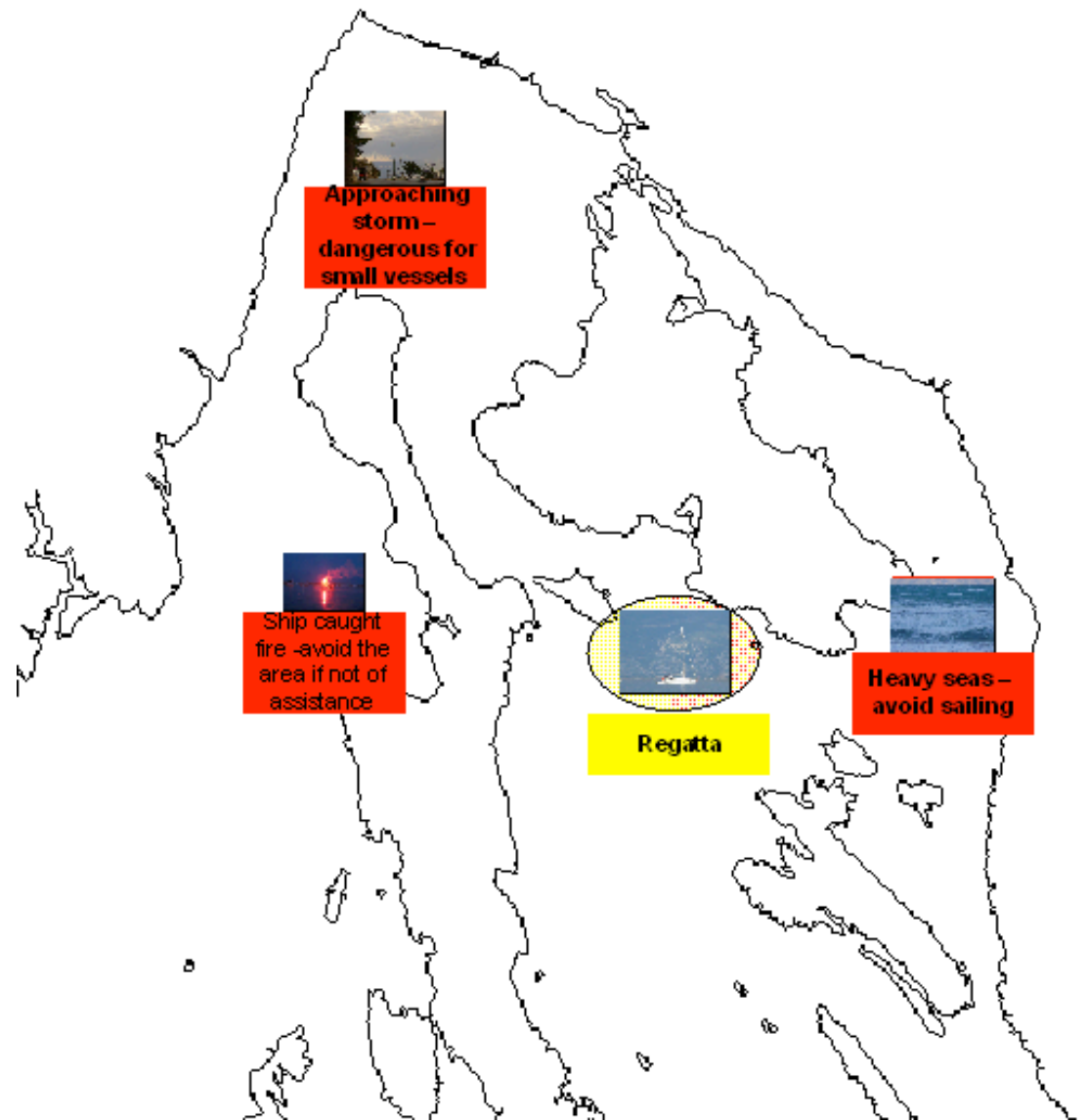
# Geospatial content syndication for navigation and location-based services

- Geospatial content syndication, geo-tagged geospatial content and the internet provide a unique framework for development of the new class of navigation and location-based services



# Internet Notices for Mariners

- A case study of geo-tagged geospatial content syndication
- Near real-time updates
- Content by trusted sources and social networks (different importance levels)
- Combination with other situation awareness enhancing systems (AIS)



# Conclusion and future work

- Distributed system for provision of geospatial data allows improved flexibility
- Geo-tagging geospatial content and syndicating it using GeoRSS allows for development of the new class of web-based navigation and location-based services
- Future work will focus on:
  - Geo-tagging various forms of position-related content
  - Syndication of geo-tagged content
  - Methods for automatic GeoRSS subscription



Thank you for your attention!

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