

ÇEV 361

Coğrafi Bilgi Sistemleri ve Uzaktan Algılama

Coğrafi Veri Temini

© Doç. Dr. Özgür ZEYDAN

<http://www.ozgurzeydan.com/>

Coğrafi Verilerin Temin Edilmesi

- İnternet
- Geobrowser (Google Earth, Bing Maps ...)
- Harita üreten kurumlar
- Özel şirketler
- Basılı medya

Coğrafi Verilerin Temin Edilmesi

- GPS
- Jeodezik Ölçümler
- Uzaktan Algılama
- Sayısallaştırma

Coğrafi Veri Kaynakları

- Türkiye Ulusal Coğrafi Bilgi Sistemleri
- Ulusal Coğrafi Bilgi Platformu
- <https://www.atlas.gov.tr/>

- GeoPortal
- Harita Genel Müdürlüğü
- <https://geoportal.harita.gov.tr/>

Atlas Uygulaması

The screenshot displays the ATLAS 2020 application interface. The main map shows Turkey with a topographic overlay in shades of green, yellow, and brown, indicating elevation. The Black Sea is visible to the north, and the Aegean and Mediterranean Seas to the south. The interface includes a search bar at the top left with the text "Konum Arayın...". Below the search bar is a "Veri Ekle" button. A sidebar menu on the left lists various data sets under the heading "VERİ SETLERİ [15]". The menu items are:

- E-plan Aski Listesi ATLAS (wms)
- E-plan UIP Kesinlesen ATLAS (wms)
- E-plan NIP Kesinlesen ATLAS (wms)
- E-plan ÇDP Kesinlesen ATLAS (wms)
- Türkiye Sayısal Yükseklik Modeli (SRTM) ATLAS (wms)
- Türkiye Su Erozyonu Haritasi ATLAS (wms)
- ILBANK İmar Planı Sınırları ATLAS (wms)
- Türkiye Kentsel Dönüşüm Riskli Alanlar ATLAS (wms)

At the top of the application, there are several navigation and utility buttons: "Giriş Yap", "Açık Veri", "3B Bina Demo", "TKGM", "Sunumlar", "Paylaş / Yazdır", and "Kurumumuzun Diğer Hi". The application is titled "ATLAS 2020" and is associated with the "T.C. ÇEVRE VE ŞEHİRCİLİK BAKANLIĞI".

Türkiye Mülki İdare Sınırları

- <https://www.harita.gov.tr/urun/turkiye-mulki-idare-sinirlari/232>



Ücretsiz

Türkiye Mülki İdare Sınırları

Kategori: İNDİRİLEBİLİR VERİLER&DOSYALAR

Fiyat: Ücretsiz

Dağıtım Birimi : Pafta

Dağıtım Formatı : ESRI shp

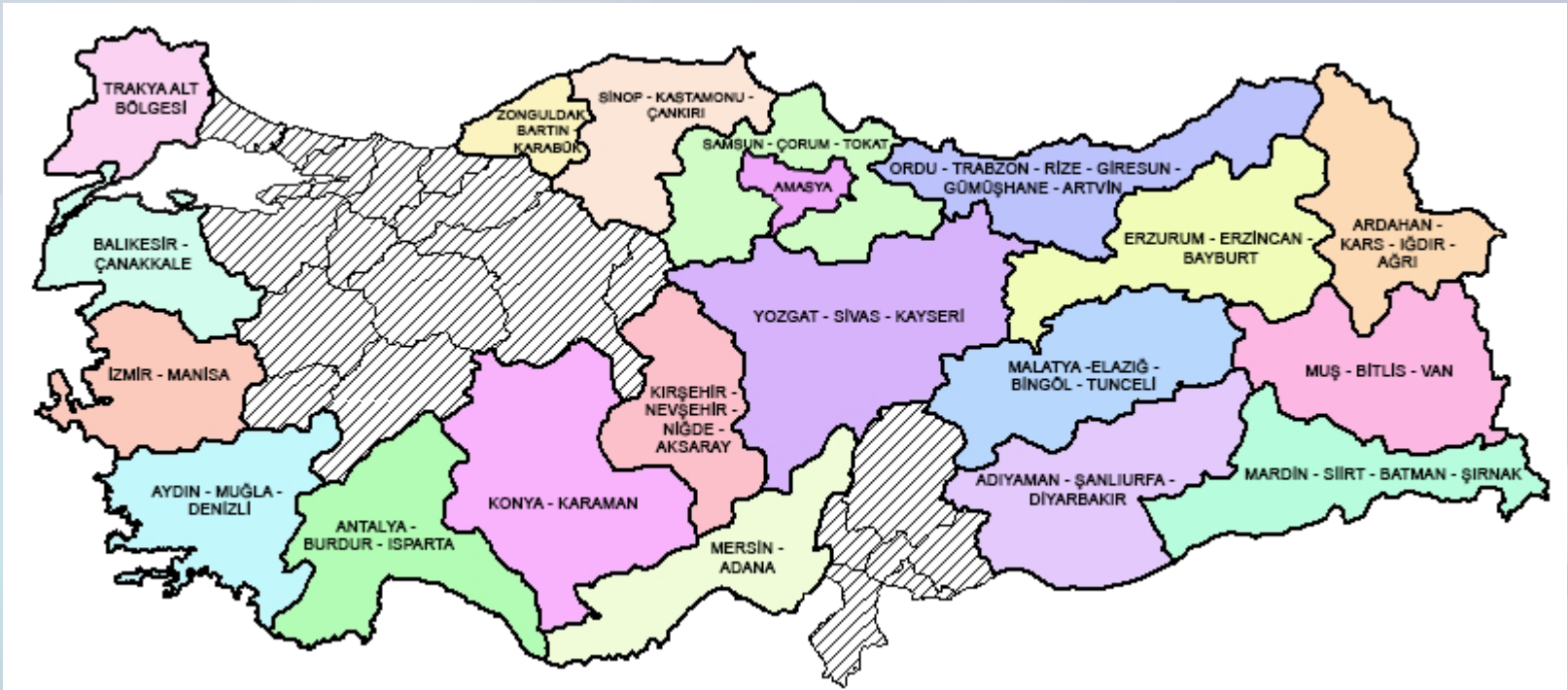
İNDİR



RAR

Çevre Düzeni Planları 1/100.000

- Mekânsal Planlama Genel Müdürlüğü

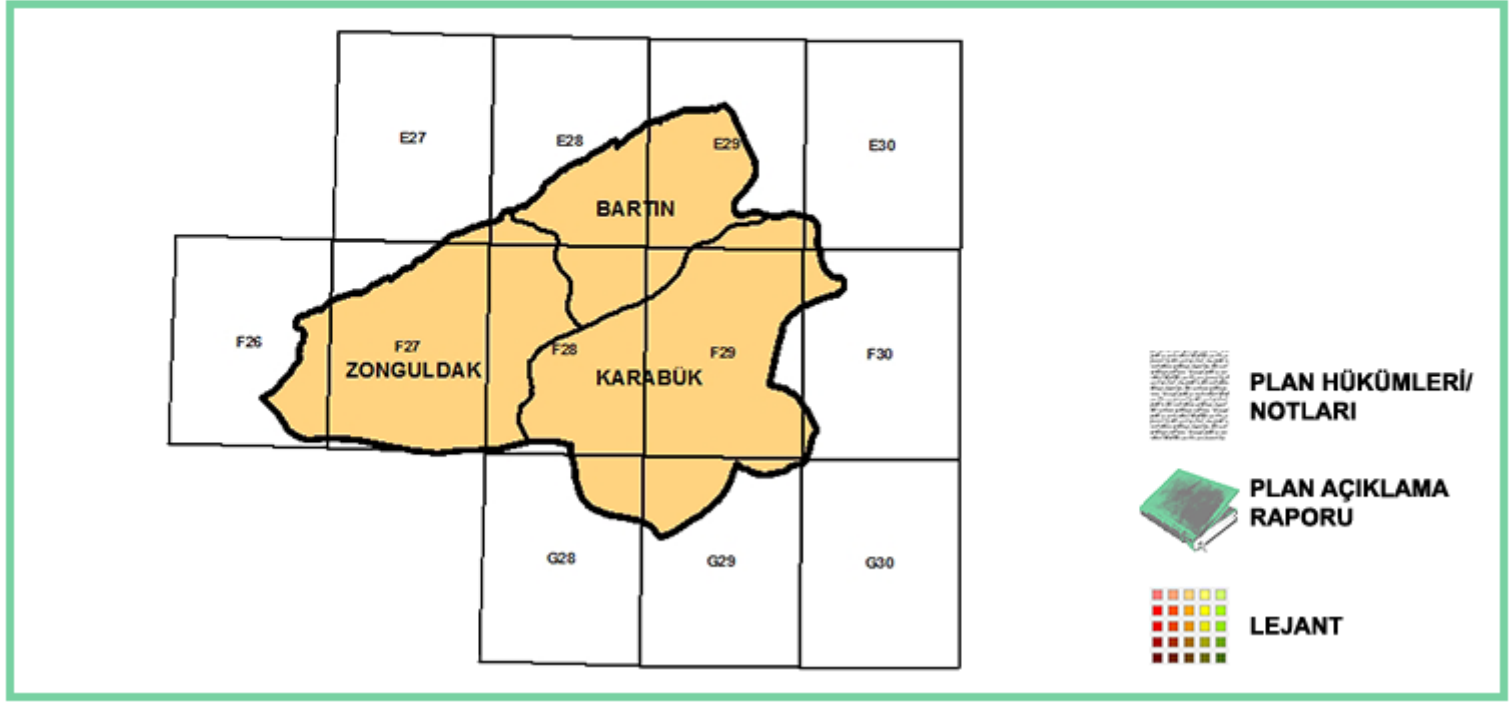


<https://mpgm.csb.gov.tr/1-100.000-olcekli-i-82132>

Çevre Düzeni Planları

1/100.000

Zonguldak - Bartın - Karabük Planlama Bölgesi



Avrupa Çevre Ajansı

Data and maps

Search data products

Advanced

Search data, maps, graphs.

Search

Browse complete catalogue

All data products

Datasets

Maps

Interactive maps

Indicators

Graphs

Filtered by

All topics



EEA coastline for analysis



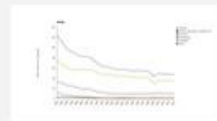
MPAs designated under the Regional Sea



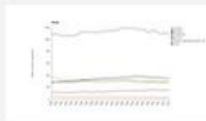
Europe's regional seas, and fast facts on EU MPA



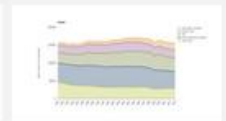
Final energy consumption and



Final energy consumption of solid



Final energy consumption by sector



Primary energy consumption by fuel



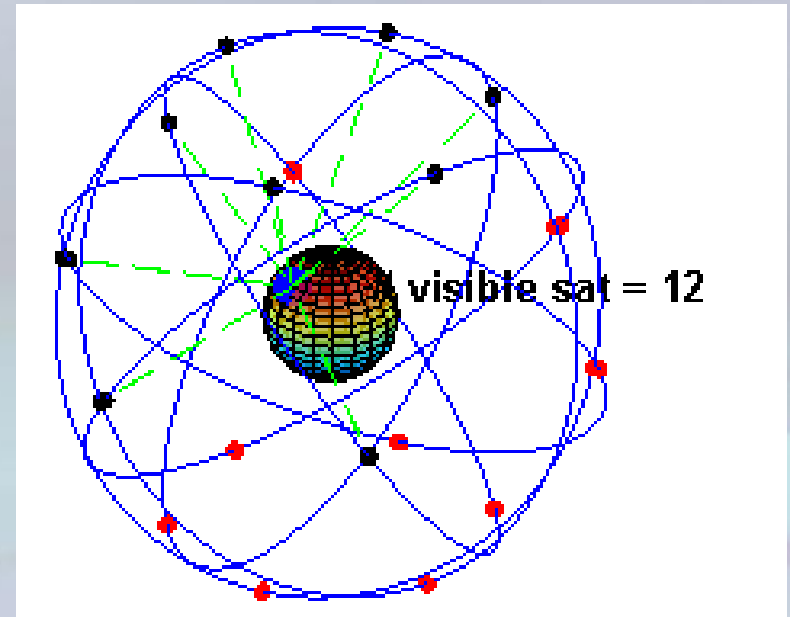
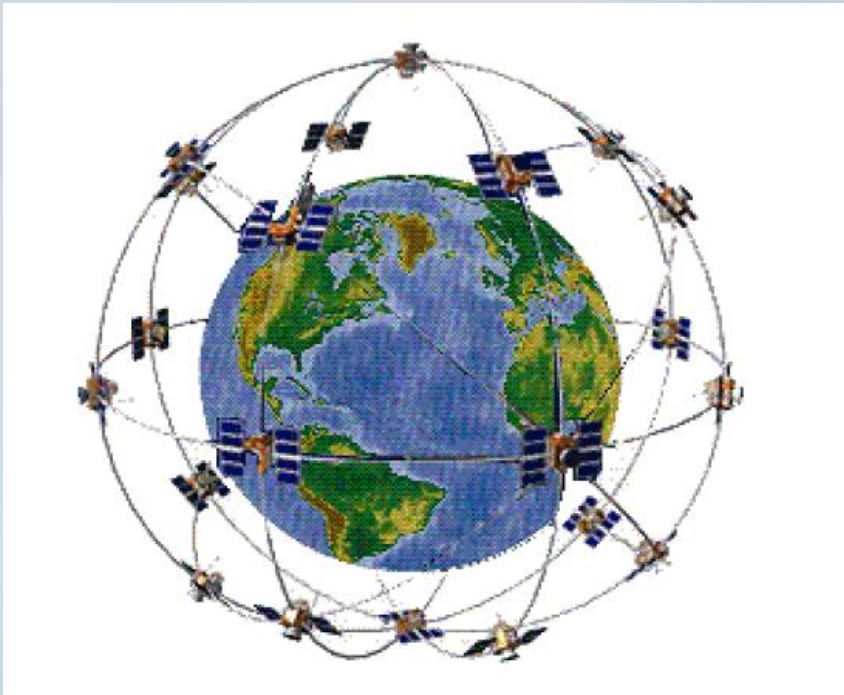
European Union Emissions Trading

<http://www.eea.europa.eu/data-and-maps>

Küresel Konumlama Sistemi

- **GPS (Global Positioning System)**
- Dünya üzerinde herhangi engelsiz bir görüş hattında, dört veya daha fazla uydusu ile her türlü hava koşulunda yer ve zaman bilgileri sağlayan uzay tabanlı uydu navigasyon sistemidir .
- 20350 km yükseklikte 28 adet uydu dünya etrafında günde 2 kez dolaşmaktadır.

Küresel Konumlama Sistemi



GPS Nasıl Çalışır?

HOW GPS WORKS

1 GPS satellites broadcast radio signals providing their locations, status, and precise time t_1 from on-board atomic clocks.

2 The GPS radio signals travel through space at the speed of light c , more than 299,792 km/second.

3 A GPS device receives the radio signals, noting their exact time of arrival t_2 , and uses these to calculate its distance from each satellite in view.

4 Once a GPS device knows its distance from at least four satellites, it can use geometry to determine its location on Earth in three dimensions.

GPS
IS A CONSTELLATION OF 24 OR MORE SATELLITES FLYING 20,300 KM ABOVE THE SURFACE OF THE EARTH. EACH ONE CIRCLES THE PLANET TWICE A DAY IN ONE OF SIX ORBITS TO PROVIDE CONTINUOUS, WORLDWIDE COVERAGE.

To calculate its distance from a satellite, a GPS device applies this formula to the satellite's signal:
 $distance = rate \times time$
where rate is c and time is how long the signal traveled through space.

The signal's travel time is the difference between the time broadcast by the satellite t_1 and the time the signal is received t_2 .

The GPS Mission Control Station tracks the satellites via a global monitoring network and manages their health and orbits based on ground antenna stations all over the world and data satellites and ground station connectivity to the satellites.

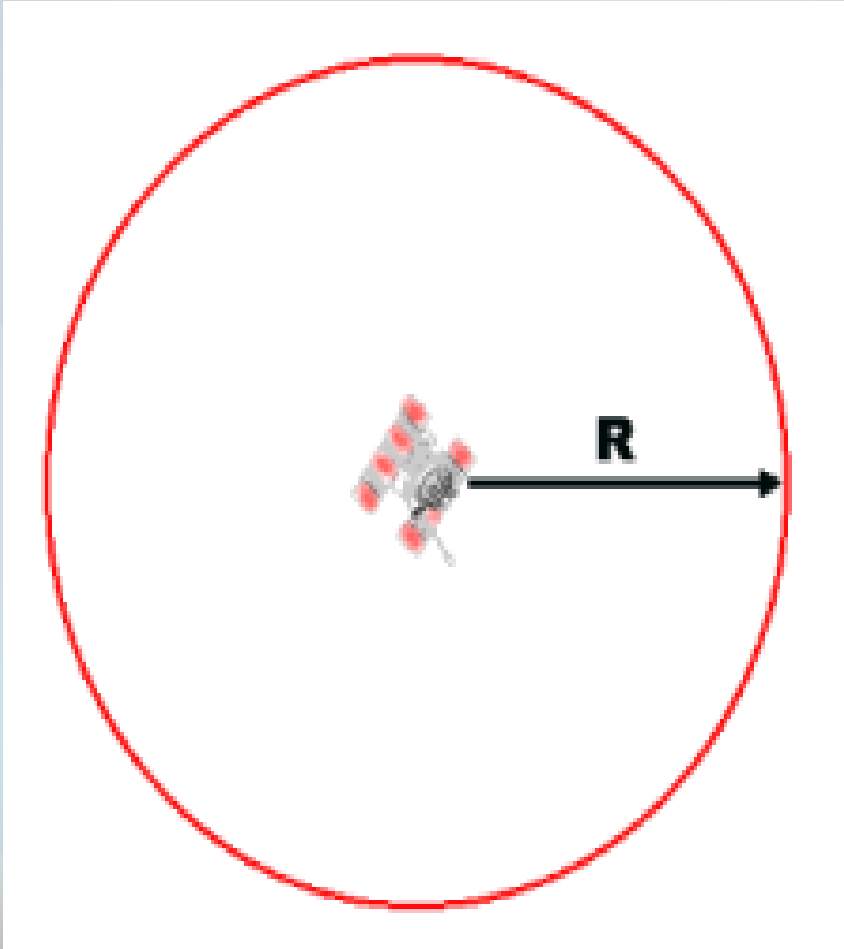
The Air Force launches new satellites to replace aging ones when needed. The new satellites are checked carefully and thoroughly.

How does GPS really work? Learn more about the Global Positioning System and its many applications at www.gps.gov

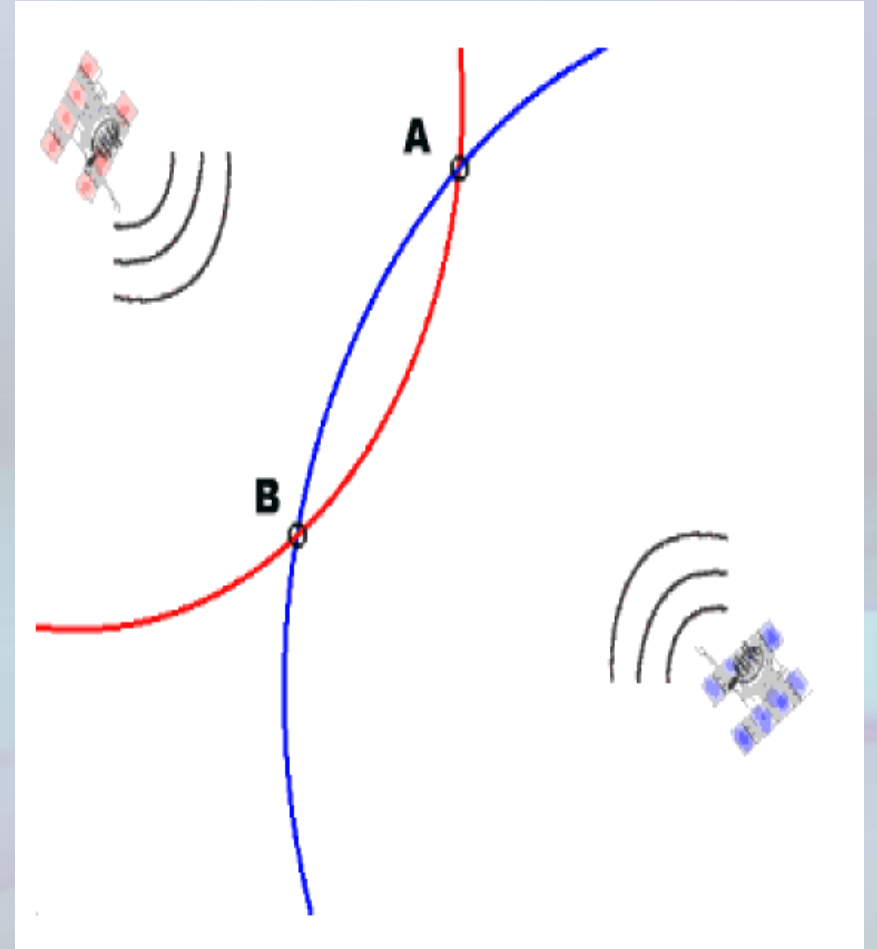
GPS Nasıl Çalışır?

- Mesafe = zaman \times ışık hızı
- $X = (t_2 - t_1) \times c$
- Işık hızı: $c = 299\,792\,458$ m/s

Konumun Belirlenmesi

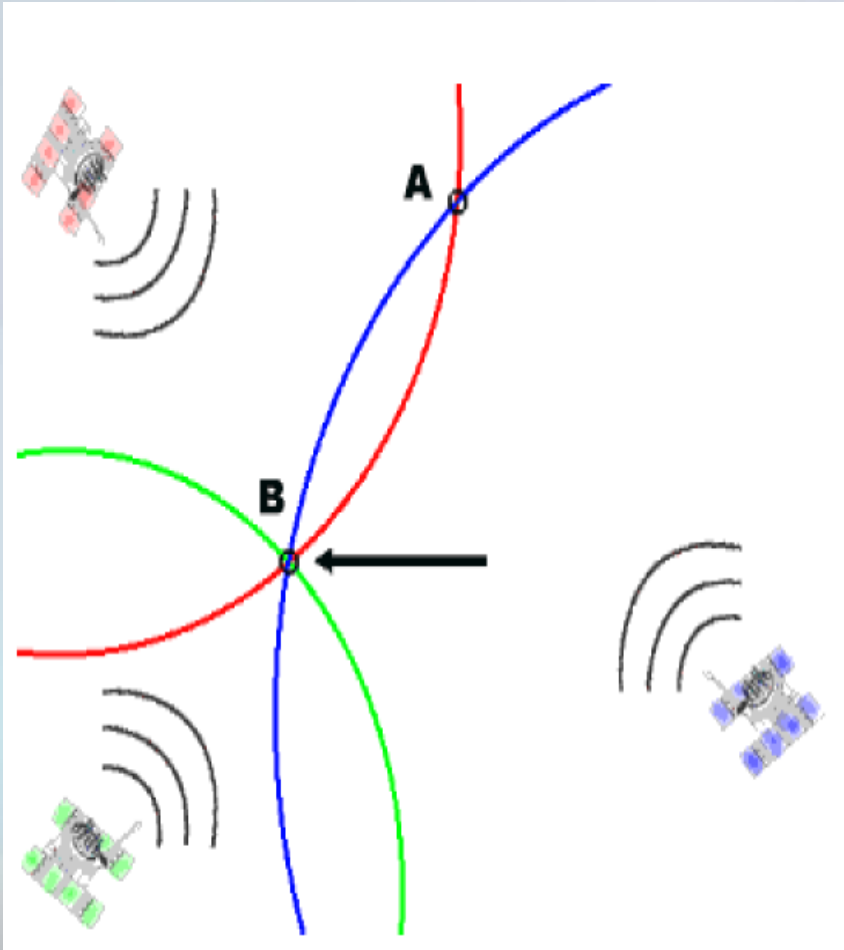


Tek uydu

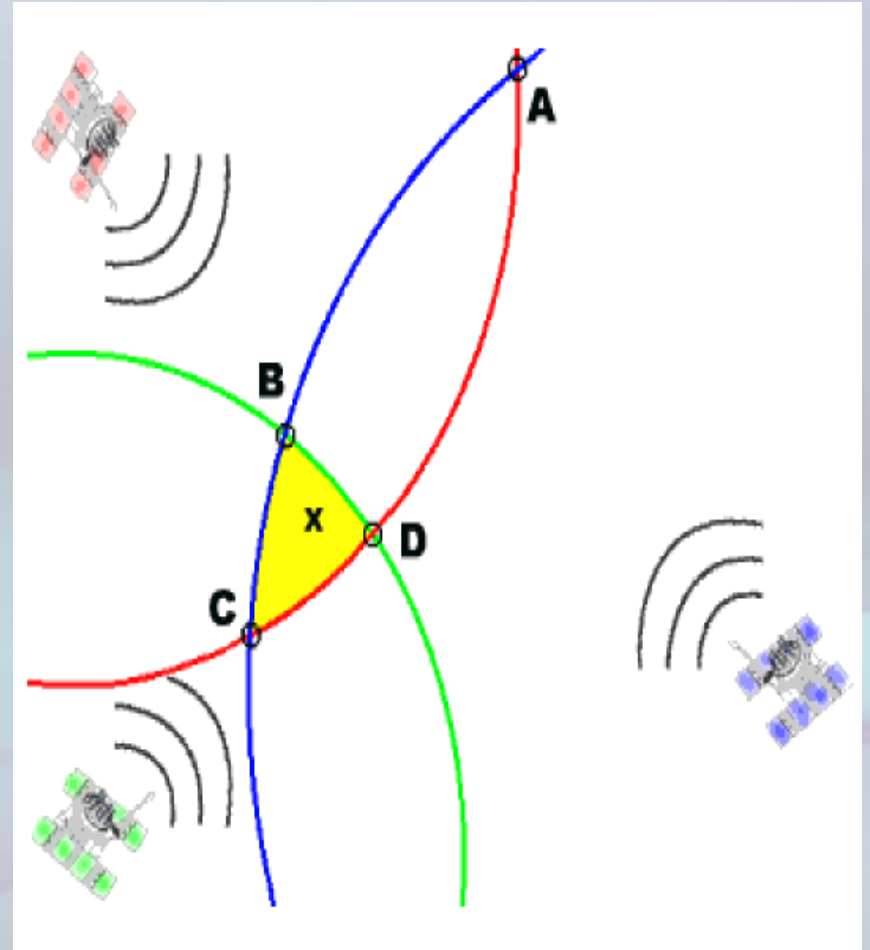


İki uydu

Konumun Belirlenmesi

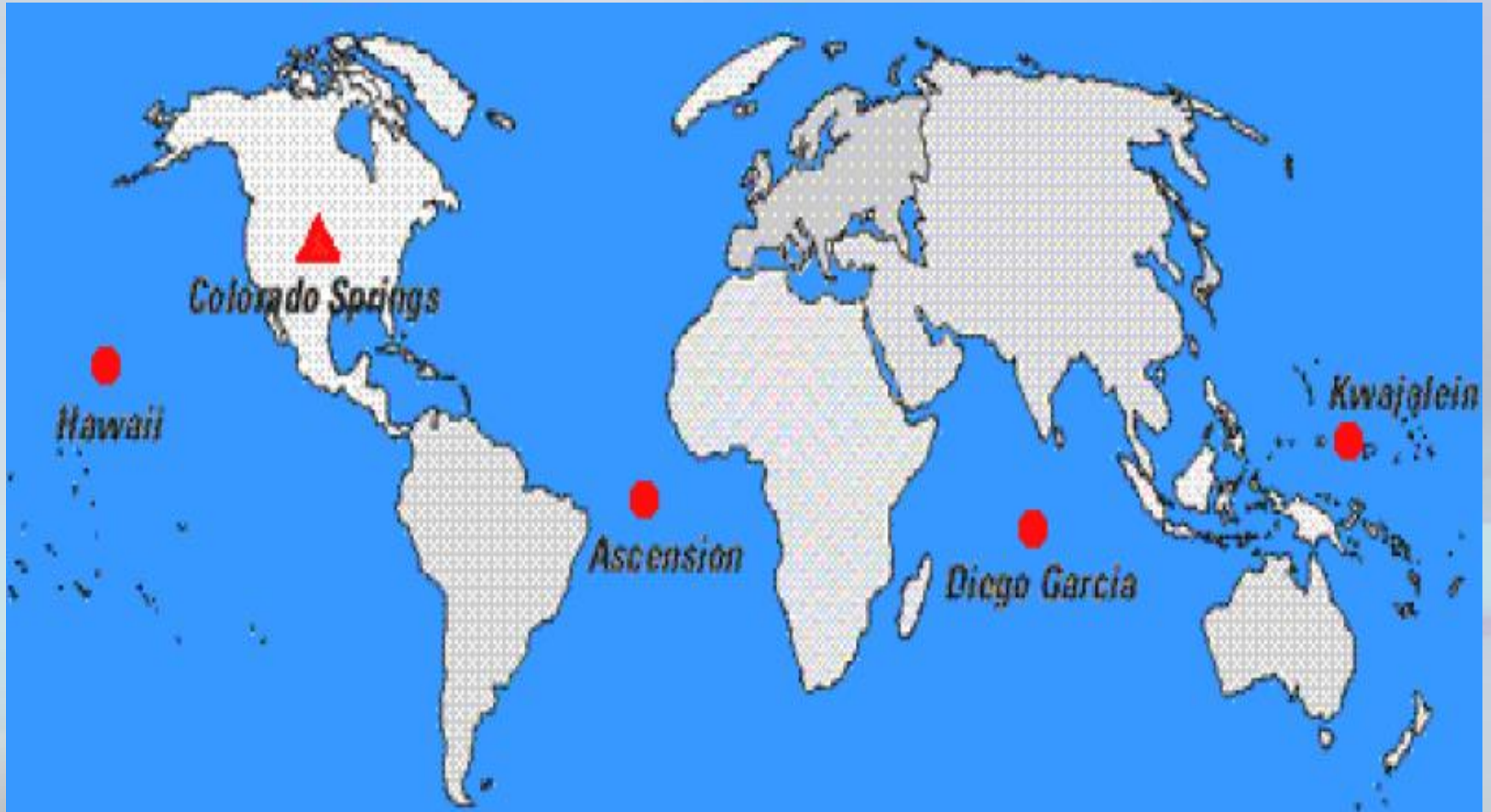


Üç uydu (ideal)



Üç uydu (gerçekte)

GPS – Yer Kontrol Ağı



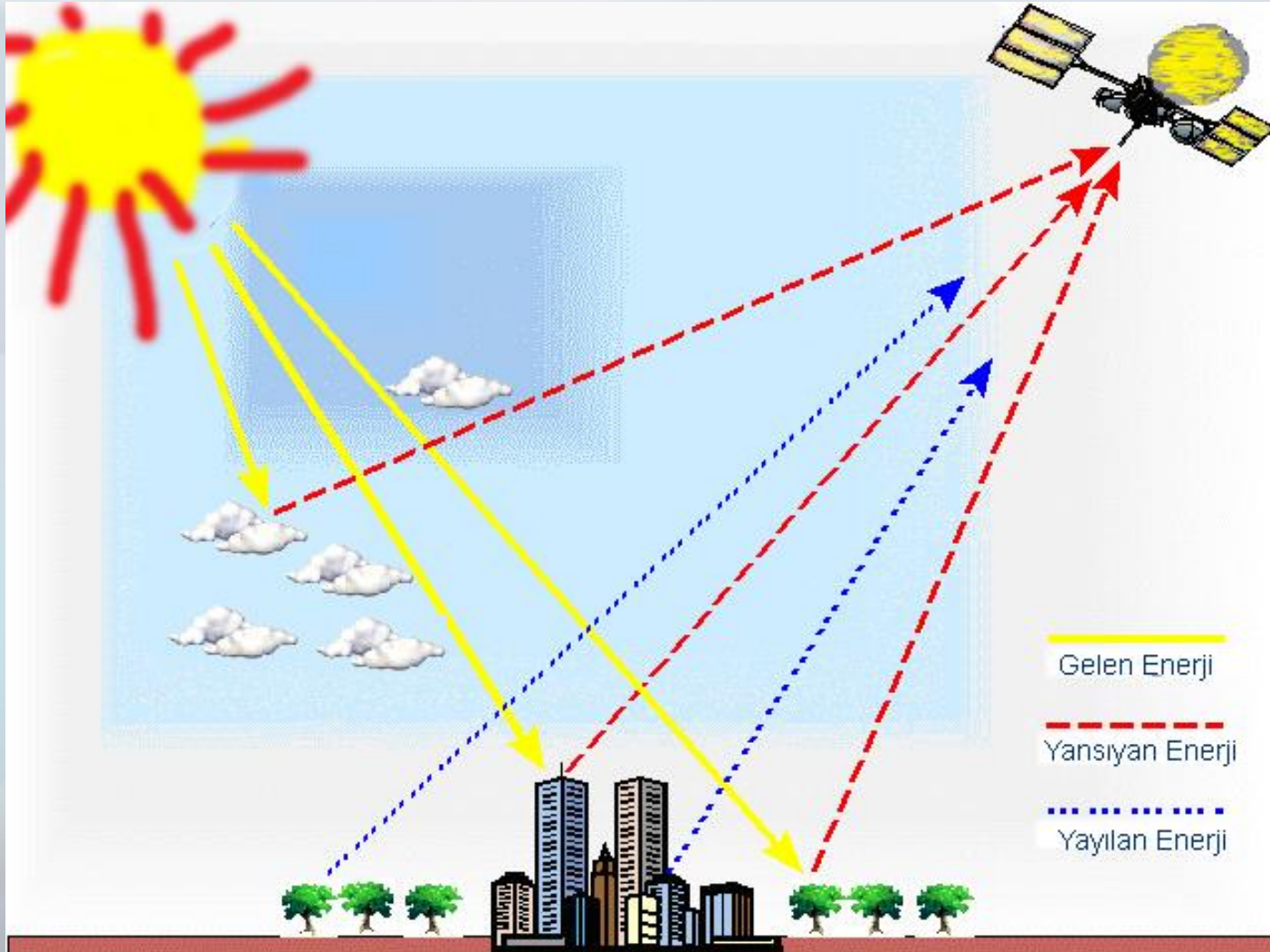
Jeodezik Ölçme Yöntemleri

- Teodolit
- Distomat
- Total Station

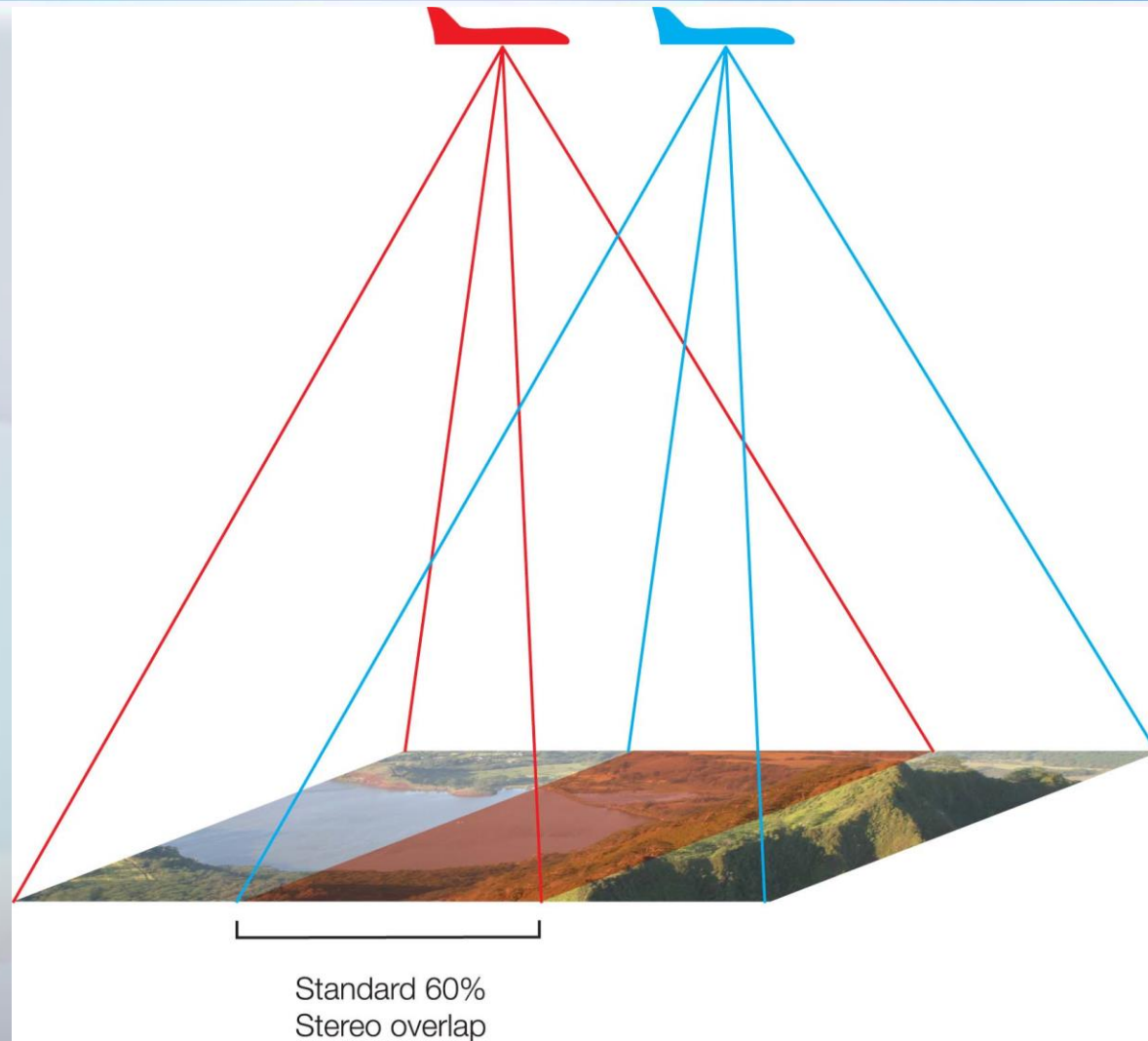
Uzaktan Algılama

- Bir nesneye dokunmadan onun hakkında bilgi sahibi olma yöntemi.
 - Uydu görüntüleri
 - Hava fotoğrafları
 - Radyometrik veriler
- Sonraki derslerde detaylı olarak işlenecek.

Uzaktan Algılama



Hava Fotoğrafları



Sayısallařtırıcı

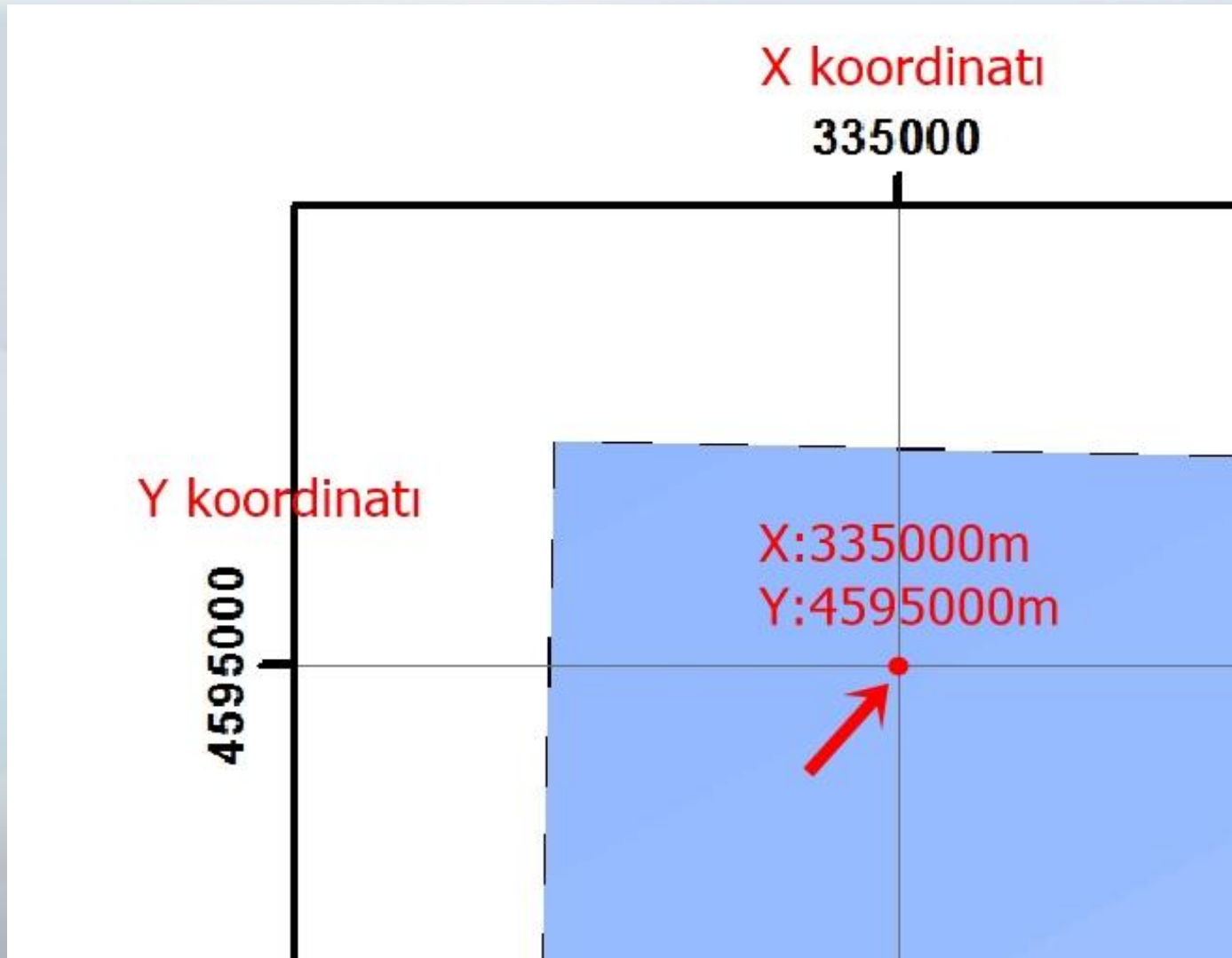
- Analog grntleri bilgisayar ortamına aktarmaya yarayan donanım birimi.



Ekran Sayısallaştırması

- Raster dosyaları
 - *.bmp
 - *.jpg
 - *.gif
 - *.tiff
 - *.png
- Coğrafi kodlama yapılı (jeokodlama)
 - mekansal verinin sayısal ortamda dünya üzerinde olduğu koordinatlarla aktarılması işi

Coğrafi Kodlama (jeokodlama)



Raster Dosyaları Çözünürlüğü

dpi: Dots per inch



http://www.pn-design.co.uk/design_blogs/low_resolution_problems.html

