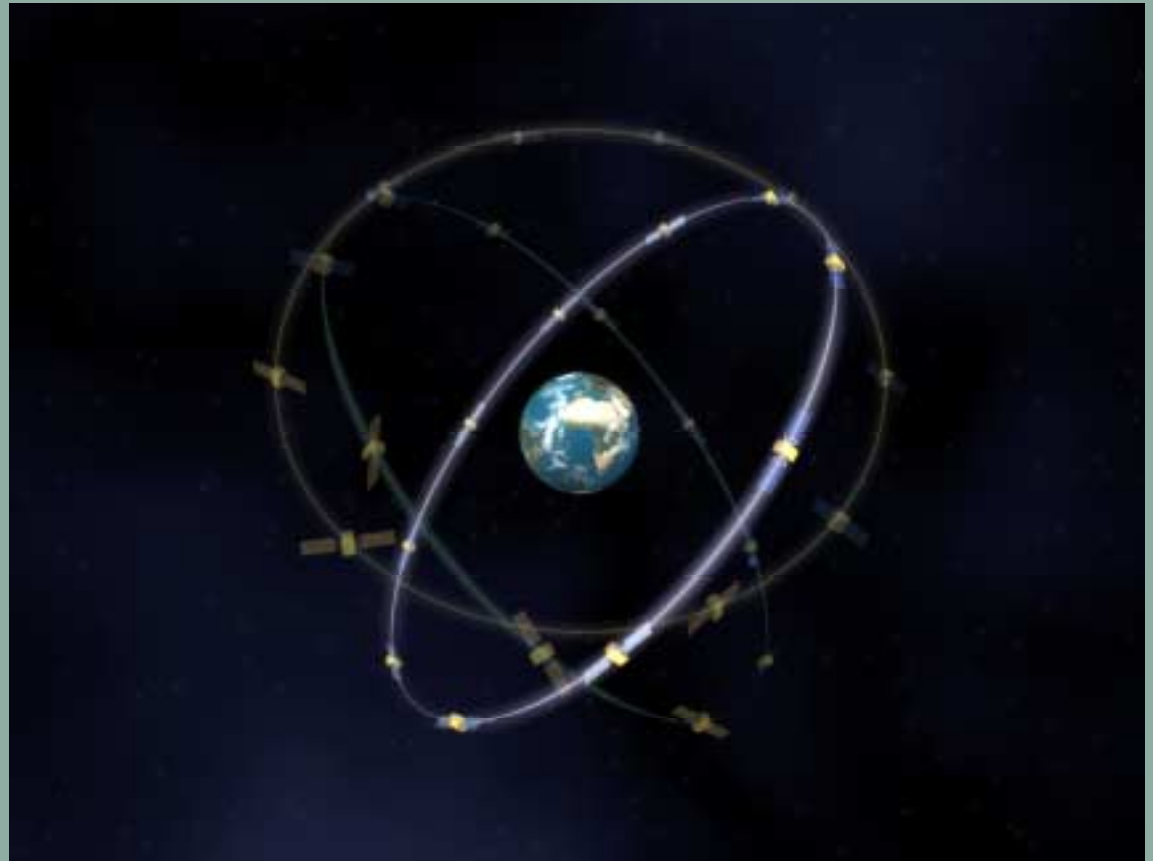


# GALILEO

**GALILEO**  
**space**  
**segment**  
**baseline**



European  
Commission

Hans-Hermann.Fromm@esa.int



# GALILEO

## Quality, Service Guarantees and Signal Integrity are the distinguishing Qualities

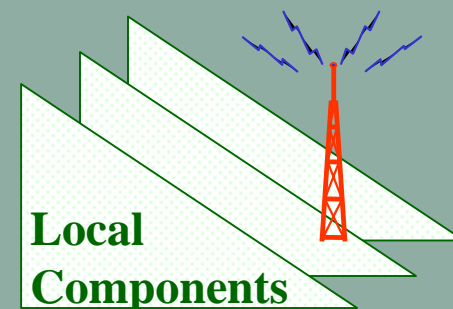
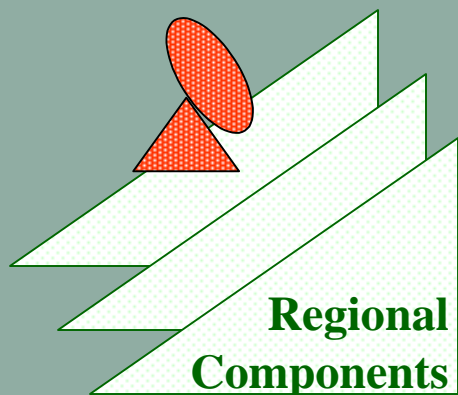
- accuracy through 2 signals
- optimum availability all over Europe through GALILEO MEO
- minimum service interruptions by design
- integrity by integration, complemented regionally or locally as necessary



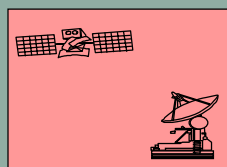
European  
Commission



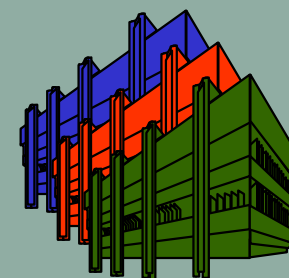
# GALILEO Architecture



EGNOS



SAR



Service Centres



European Commission



# GALILEO

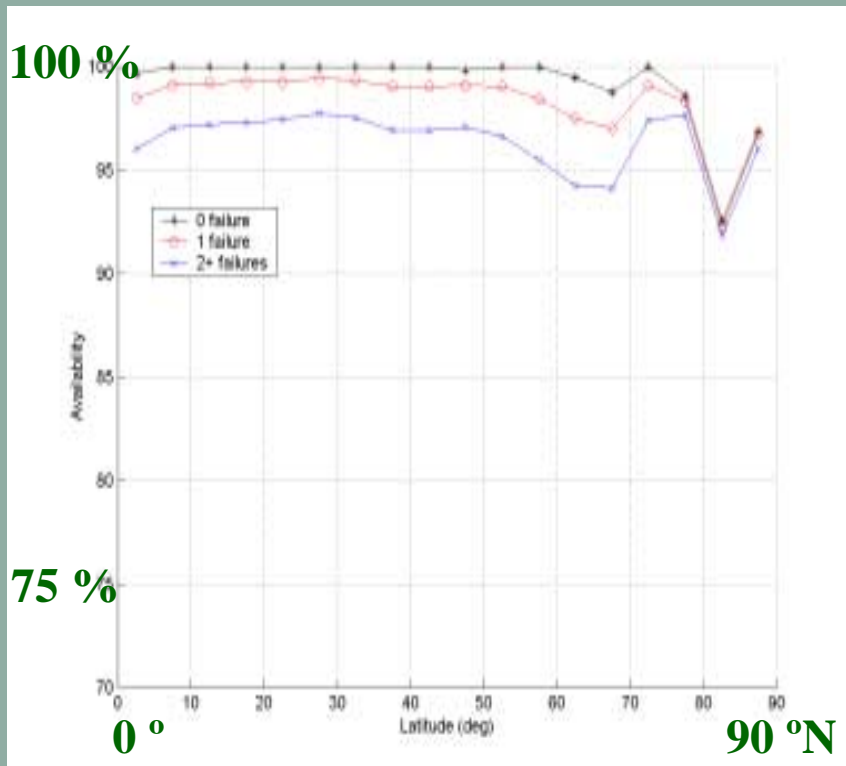
## Constellation Design Drivers

	<u>Mass Market Applications</u>	<u>Safety Related Applications</u>
User Masking Angle	25 °	5 °
Accuracy (95 %)	10 m horizontal	4 m vertical
Coverage	global	
Availability	better than 70 %	better than 99 %
Integrity	not generally required	mandatory

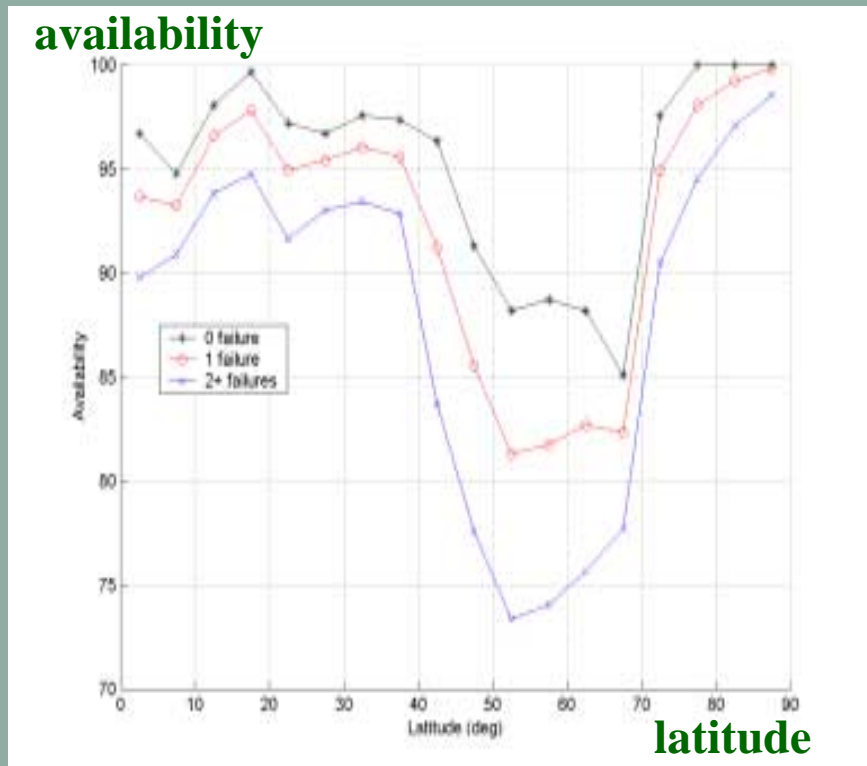


# GALILEO

## Constellation Optimisation



Availability  
mass-market performances,  
30 MEO



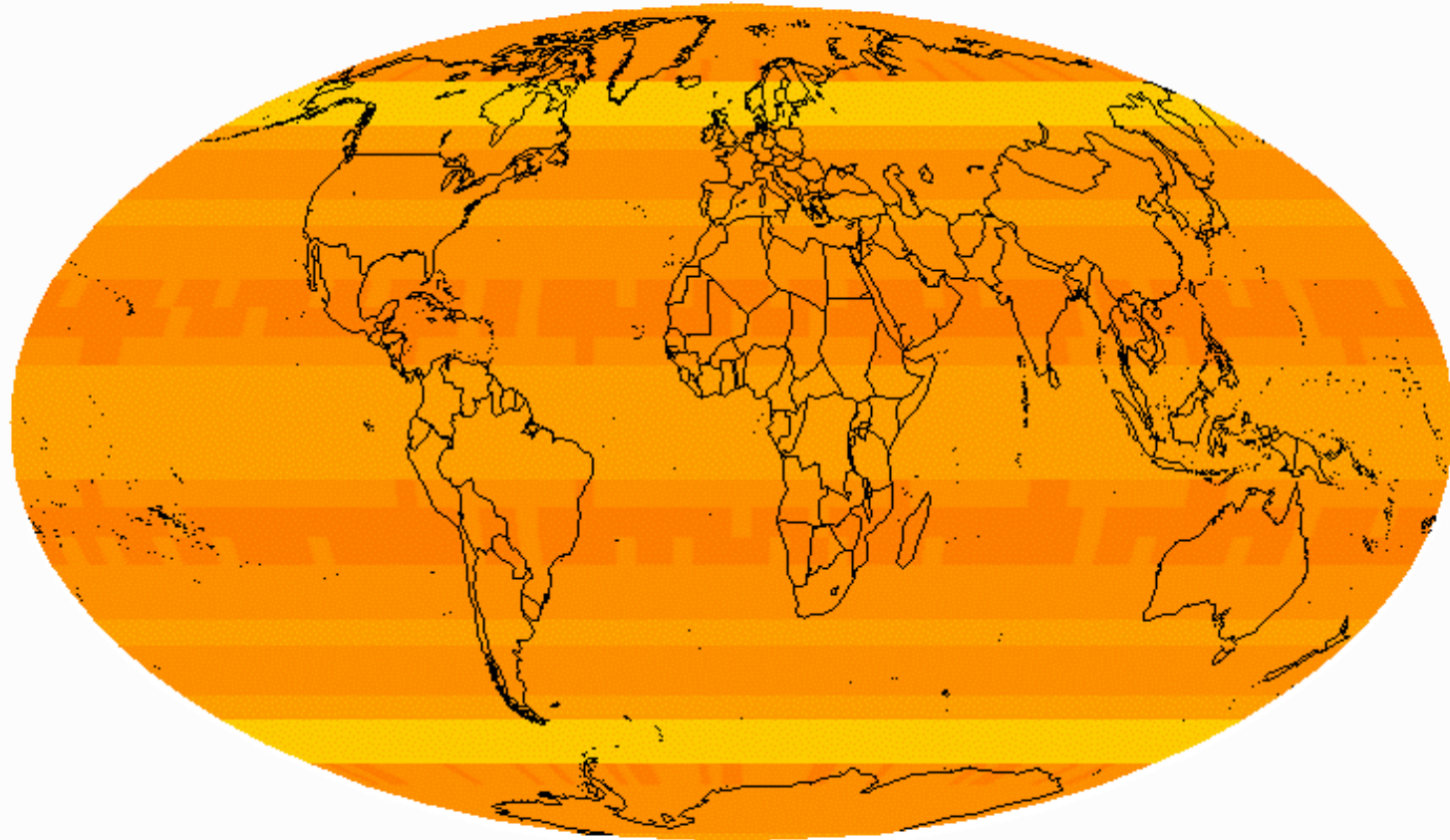
Availability  
mass-market performances,  
24 MEO + 8 GEO, 1 GEO failed



European  
Commission



# Vertical Accuracy GALILEO MEO Constellation



metres



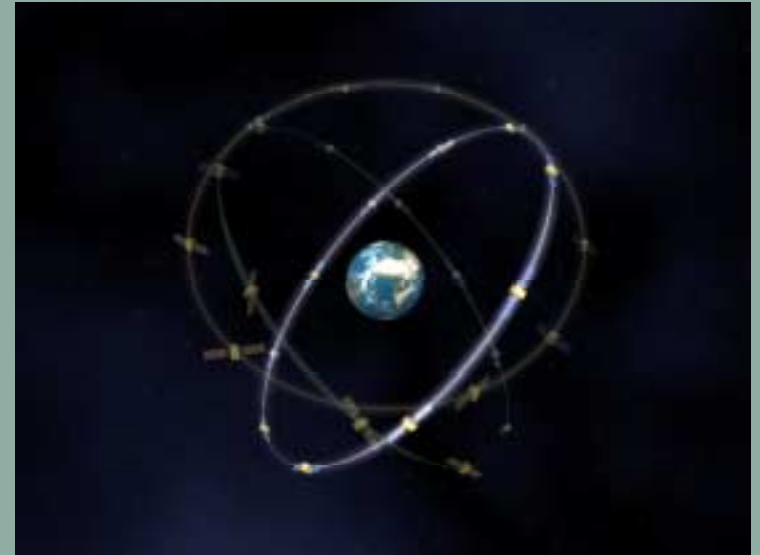
European  
Commission



## For those who wish to know:

### GALILEO MEO data:

- altitude 23222 km
- period 14 hours 4 min
- ground track repeat 239.4 hours (~ 10 days)

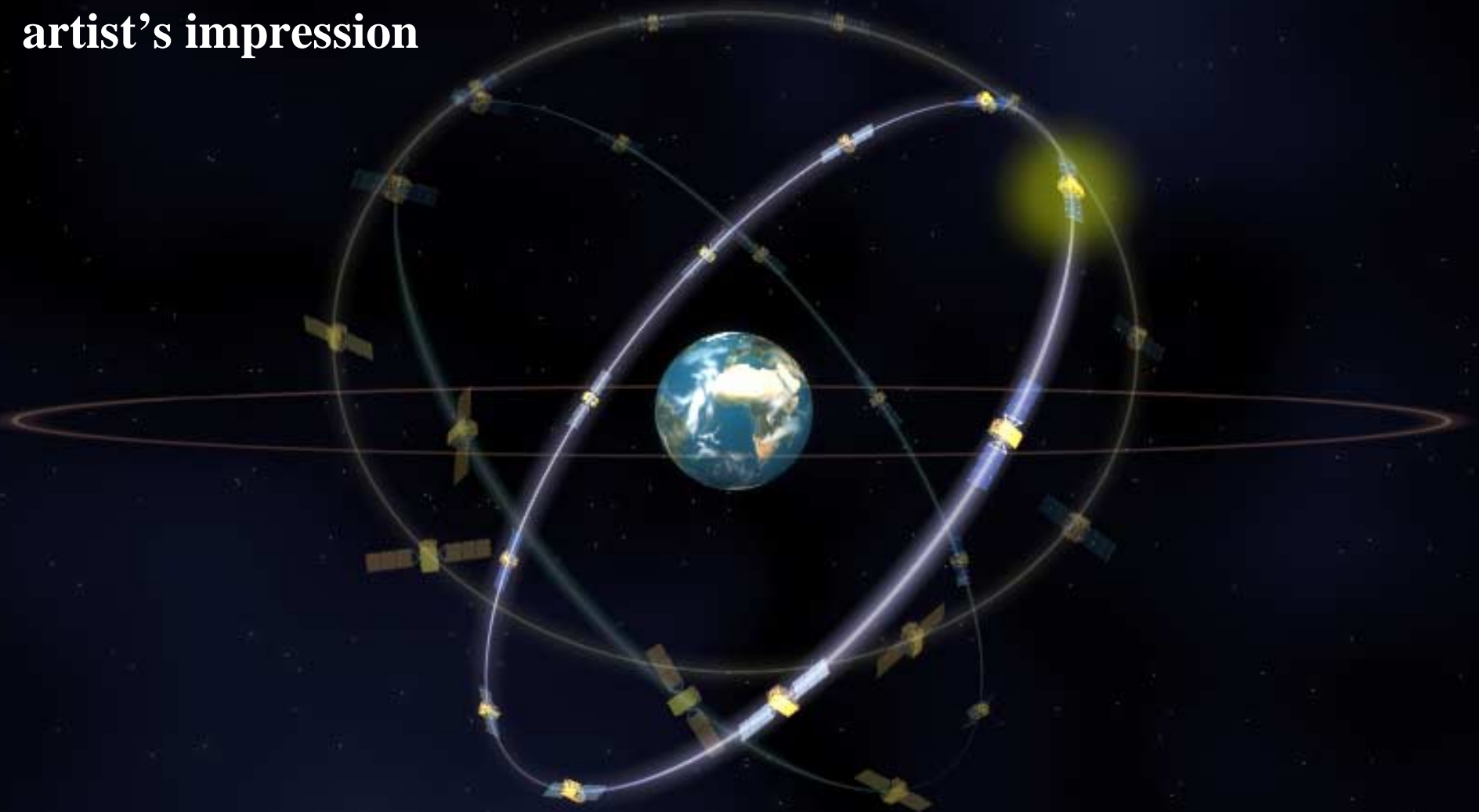


European  
Commission



# Galileo constellation

artist's impression

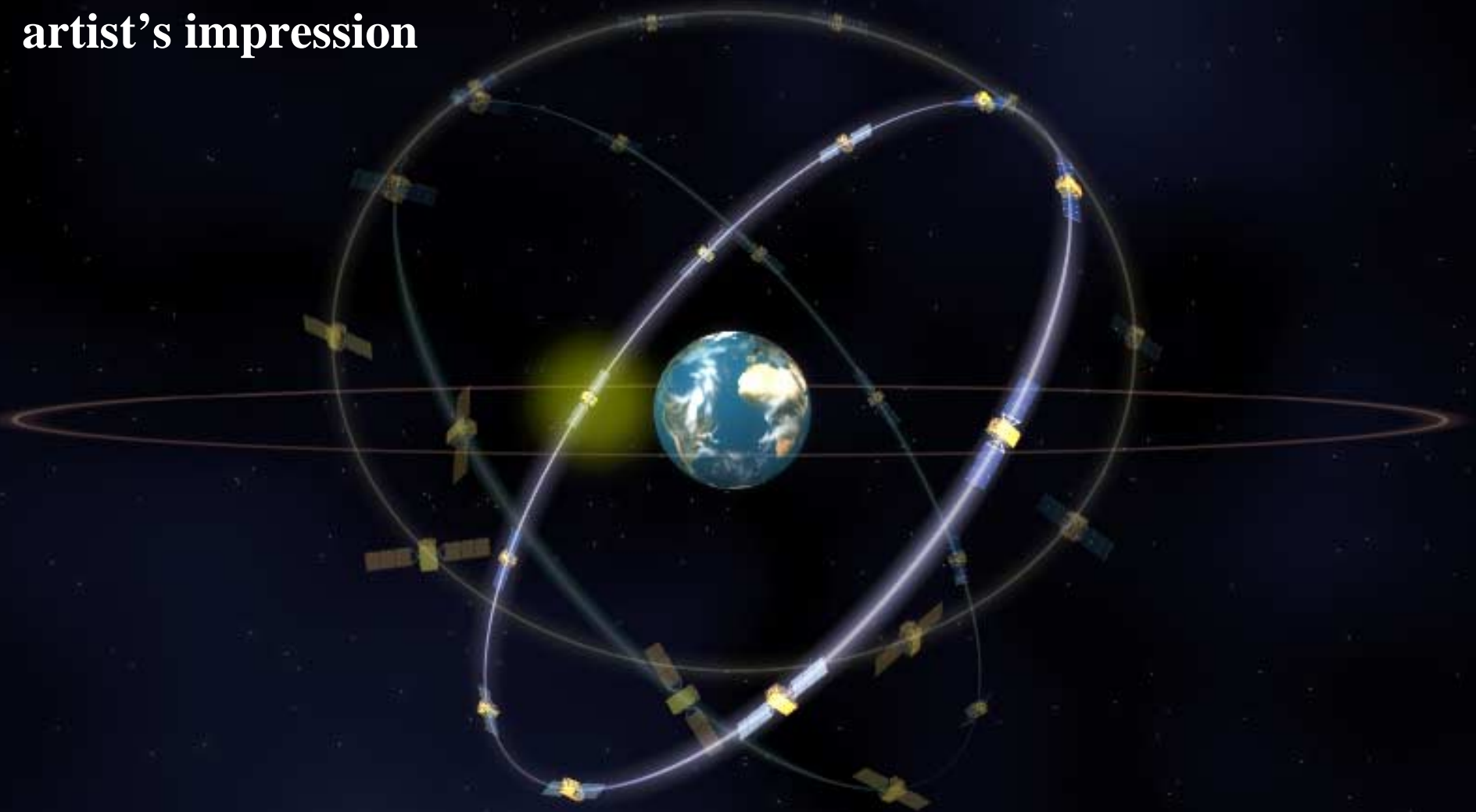


00:00 hours



# Galileo constellation

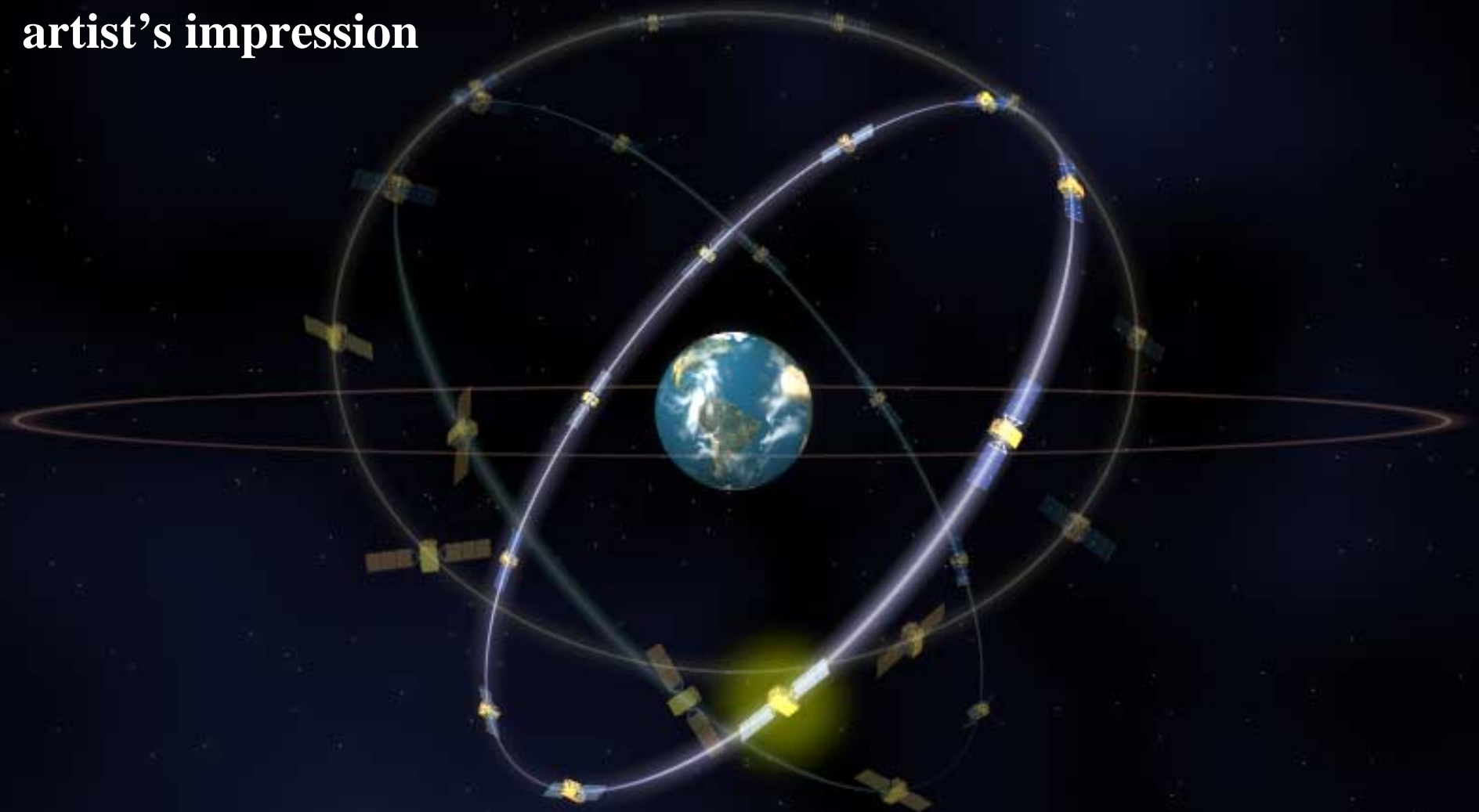
artist's impression



**05:37 hours**

# Galileo constellation

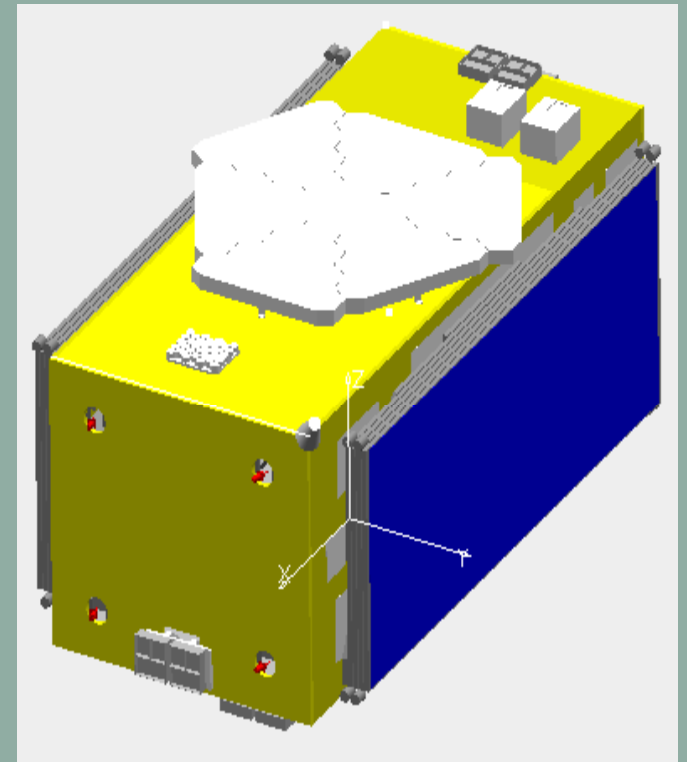
artist's impression



11:15 hours

# GALILEO Spacecraft Characteristics

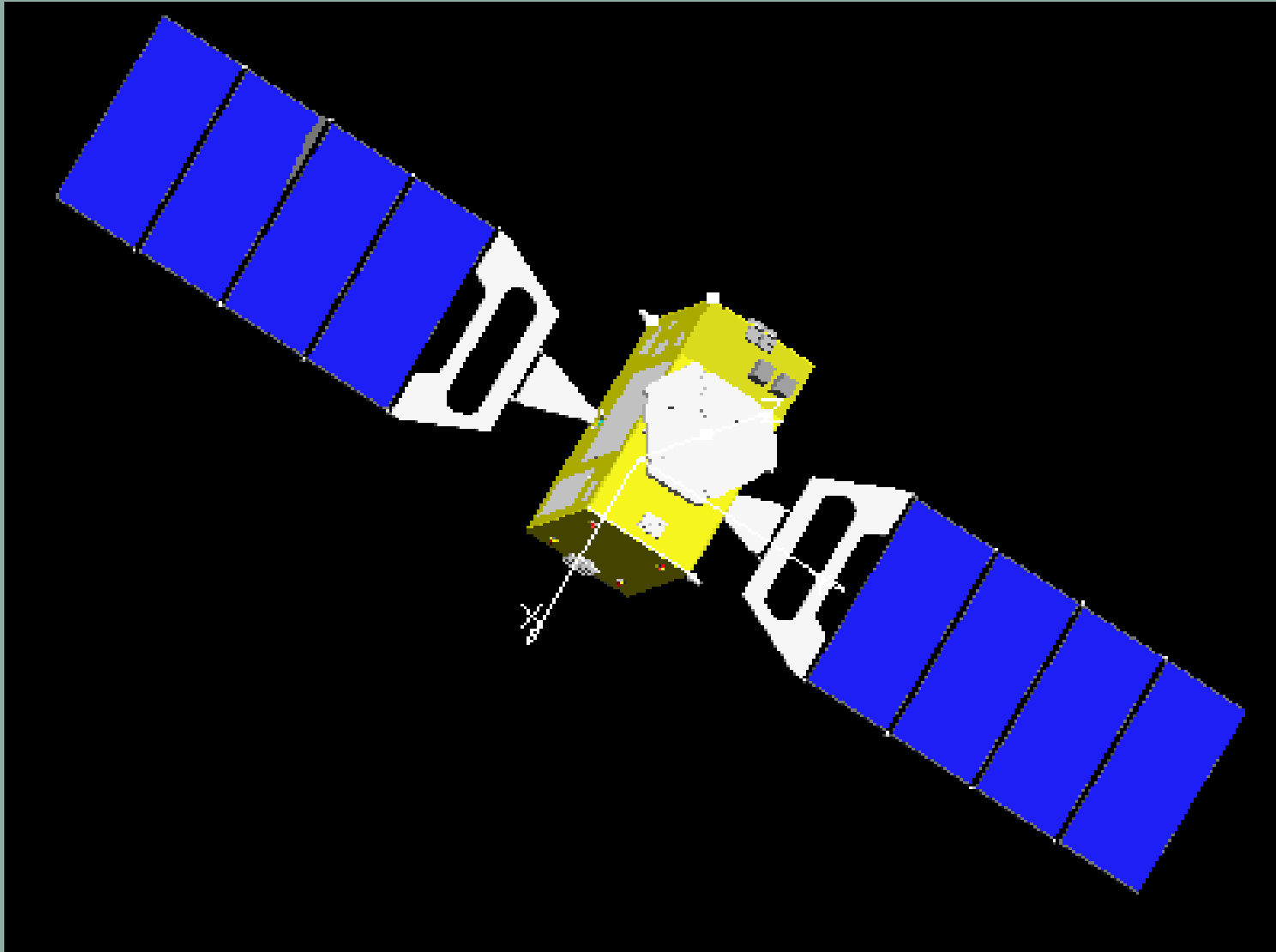
- Navigation payload: 70-80 Kg / 850 W
- SAR transponder: appr. 20 kg
- Overall Spacecraft: 650 Kg / 1.5 kW class
- Launcher Options: Ariane, Proton, Soyus, .....



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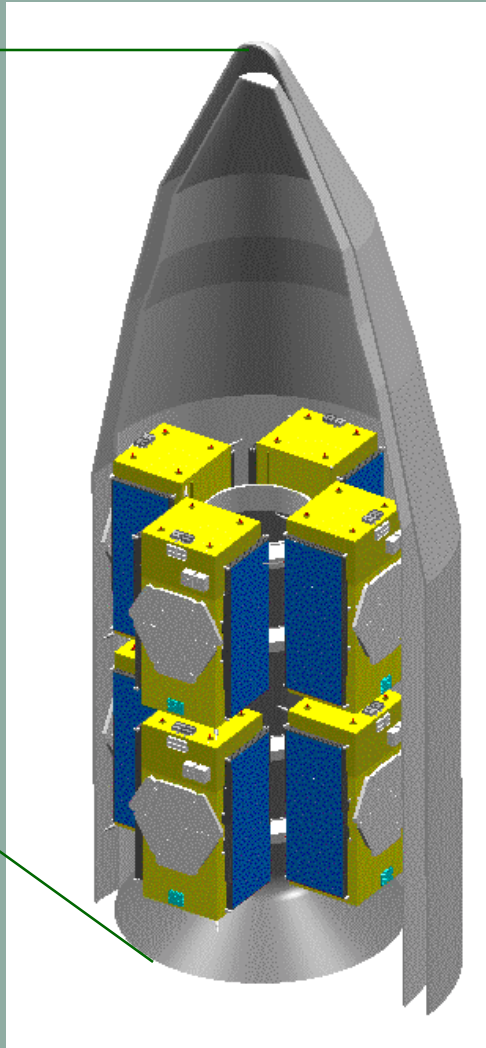
# GALILEO in Flight Configuration



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**8 GALILEO  
spacecraft on  
ARIANE V**



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Commission



# GALILEO MEO Control

TT&C stations

orbitography stations

Satellite Control Centre

Navigation Control Centre

Service Centre Interfaces



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