



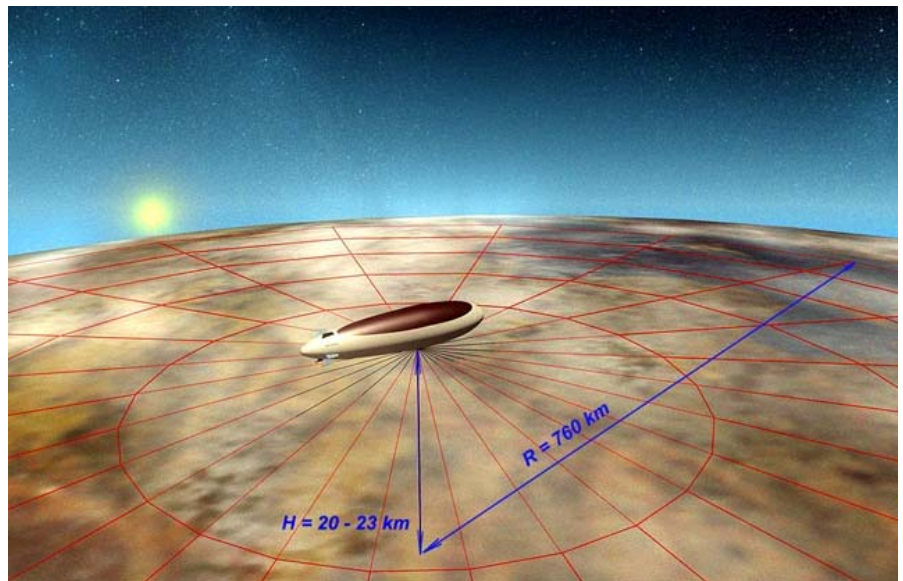
High Altitude Airship "Berkut"

:: Application of the High Altitude Airship Berkut: :

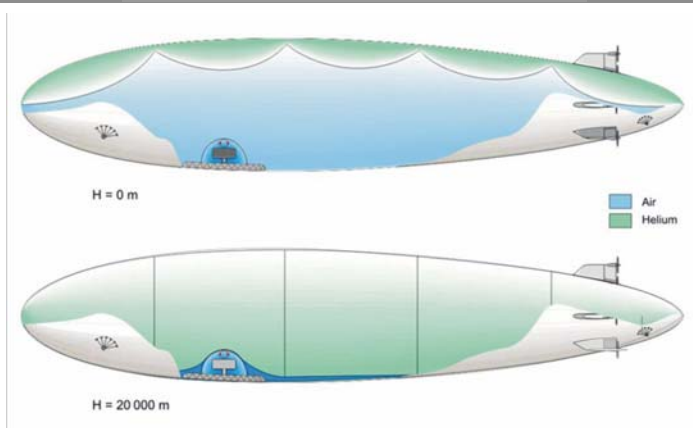


Our High Altitude Airship (HAA) Berkut is a unique combination of lighter - than - air and space technologies, a cost effective alternative to geostationary satellites. This project will open a new era in communication and earth observation.

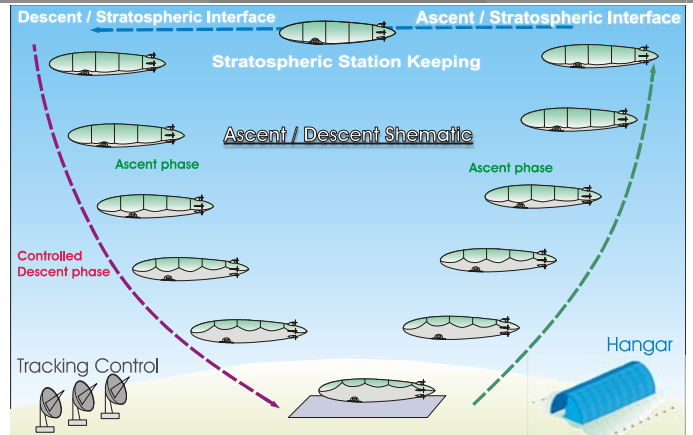
The HAA Berkut is a solar powered airship capable to keep its position over a certain place on a 20 - 23 km altitude. The Berkut can carry up to 1200 kg of various communication and surveillance equipment and supply it with electrical power. Geostationary performance (station keeping) enables to provide various communications, broadcasting and observation services to the territory of more than one million square kilometers. It covers any large metropolitan areas and such countries as France or United Kingdom! Unlike geostationary satellites, the HAA allows to repair, upgrade or replace the equipment every 3 - 4 months while the airship perform service landing. This stratospheric platform is expected to generate new earth observations at the local area (highly important for anti terrorism and anti smuggling missions). Also it will make possible ultra- high - speed data communications by portable terminals, and will be a new infrastructure for the new generation system of information and communications. Experts admit that the HAA can provide over 1000 times better the fixed broadband local access capacity of a geostationary satellite with the same frequency of a band, on bytes per second per square kilometers basis.



:: The HAA Volumes Variation



:: Horizontal launch





HAA "Berkut" technical data	Berkut ET	Berkut ML	Berkut HL
Volume cub.m.	192 000	256 000	320 000
Lenght m.	150	200	250
Max. diameter m.	50	50	50
Max. engine power kW	50	50	50
Propellers d	6m	6m.	6m.
Daily average power consumption kW	100	165	230
Payload kg	1200 kg	1200 kg	1200 kg
Payload power consumption kW	15	15	15
Solar cells area sq. m.	3 500	5 800	8 000
Number of fins with engines/propellers	3	5	7
Altitude km	20-23	20-23	20-23
Flight endurance /months/	4	4	4
Total weight	13 500 kg	18 000 kg	22 500 kg
Latitude zone	0-30 deg.	30-45 deg.	45-60 deg.
Number of hangar section	12	14	18

HAA Berkut is deigned in three version

1. Berkut ET – for equatorial and tropical countries ;
2. Berkut ML– for middle geographical latitudes (30-45 deg.);
3. Berkut HL – for highest possible geographical latitude (45-60 deg.);

All three versions have the same performance and same basic technical approach. The highest latitude is (shorter day at winter time) the more solar cells and more batteries are required. Also the wind speed and power required for station keeping at the working altitude on equator almost 1.5 times less than on high latitudes. Therefore we designed three different envelopes with same max. Diameter but different length and volume. Same type of tail fins with electrical engines and large propellers are employed on all versions. Seven - for HL, five - for ML and three - for ET. Similar infrastructure is designed. That approach allows lowering development cost for every new version. The heart of the HAA is a power management system based on proven technical approach of famous Russian space craft manufacturers enriched by the best world experience

Innovative launch and infrastructure technology enable our customer to assemble giant hangar for HAA Berkut at almost every place within one day! The hangar walls assembled of pressurized tubes. The tubes are composed in section, 30 m long each. Two sides of the hangar sections are locked to each other on the top of the hangar. Unlocking them and pooling the sections allow assembling hangars 270, 210 and 180 m long for HL, ML and ET version correspondingly.

The HAA Relocatable Hangar

The HAA Relocatable Hangar	
Length	270 m
Height	60 m
Width	90 m
Working area (L*H*W)	270*54*72 m
Number of sections	18
Weight of one section	2 000 kg
Total weight	36 000 kg
Assembling time	15 hours
Opening time	5 min
Tube pressure	3 kPa

