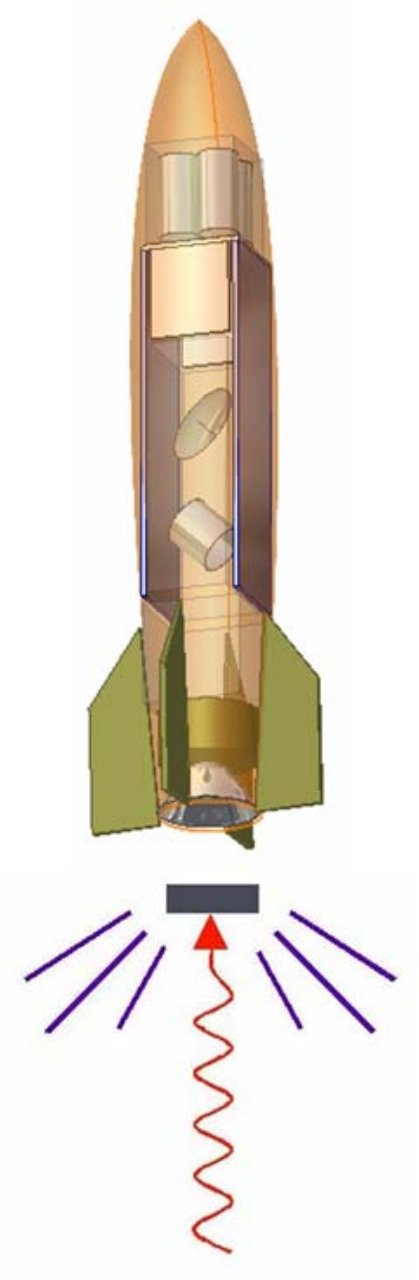
Rocket using Laser Engine

This is a low earth orbit satellite (LEO – Low earth orbit).
The satellite is launched using a high power laser that shoots on an ablation material.
Orbit is at 300-18,000 km
Contact time: 96 min
Vision: 1.0m x 1.0m (normal, night and IR – infra red)

Communication:
C band (3.6 GHz to 7.0 GHz)
X band (7.25 GHz to 8.4 GHz)
Ku band (10.7 GHz to 14.5 GHz) ?
Ka band (17.3 GHz to 31.0 GHz) ?



Micro satellite

West Malaysia	North: 2 degrees 0 min, East: 104 degrees 0 min Place: Pulau Tioman
Payload	~50 kg
Attempted Orbit	300 km X 700 km
Attempted Orbital period	96 min. 0 sec.
Approximate inclination	~41 degrees
Launch Vehicle Height	~8.0 m two stages, 1.5m Laser Propulsion
Launch weight total	~100 kg
Range	Orbital
Lift off G's acceleration	~1.8 g's
Burn time to orbit	300 sec.

Rocket using Laser Engine

Stage-1 (Rocket Angkasa 2003)

Height	~8.0 m with two-stage
Diameter	1.0 m
Launch weight	~100 kg
Launch Thrust	~30,000 kg f. sea level
Isp.	216 sec sea level, 235 sec. vacuum
Burn time to staging	95 sec.
Fuel	Laser propulsion
1st Stage shutdown altitude	80.0 km
1st Stage down range distance	120.0 km
1st Stage impact point	2 degrees 0 min North, 106 degrees 0 r
Payload Separation	144 sec. in flight, 0 seconds after stagir

Stage-2 (Laser Propulsion Separation)

Height	~5.0 m to third stage interface
Diameter	0.80 m
Launch weight	~80 kg
Launch Thrust Altitude	~15,000 kg f, acceleration
Burn time to staging	~170 sec.
Fuel	Laser propulsion
2nd Stage impact point	2 degrees 0 min. North, 107 degrees 0 min. East

Rocket using Laser Engine

Stage-3 (Orbit Positioning)

Height	~4.5 m
Diameter	~0.80 m
Launch weight	~50 kg total package, satellite and compressed air
Launch Thrust Altitude	Burn time to staging- 25 sec.(27 sec. to orbit after separation from second stage). Spin up the third stage and satellite combination and also properly align itself for the orbit insertion firing compressed air while rotating about its center of gravity. The satellite is observed in space for 25 seconds after separation from the third stage. The third stage compressed air alignment will be clearly observed.
Propellant	Laser Propulsion
3rd Stage orbit	~300 km
Orbital Injection Velocity	~8,000 m/sec.
Satellite Angkasa 2003	The satellites structural design is a unique design by us.
Diameter	0.80 m
Length	~4.5 m
Mass	50 kg
Frequencies	~180, ~400, ~1800 MHz and 4/6 GHz
Vision system	~10m X 10m Normal, IR and night vision

Rocket using Laser Engine

Telemetry, tracking and command

AV controls

Microwave communications

Computer control 1

Rocket using Laser Engine

Computer control 2

Computer control 3

Rocket using Laser Engine

Computer control 4

Computer control 5

3 Basic satellite microwave dish configuration

Dish type 1

Dish type 2

Mobile: 0126977577, Email: crystalcommunication@yahoo.com
http://www.geocities.com/crystalcommunication

Rocket using Laser Engine

Technical specifications:

Rocket:

Dimension: 8m x 1m bullet aerodynamic shape
Propulsion: High power laser that shoots on an ablation material.
Body: Titanium covered with ceramic tiles
Speed: 40,000 km/h
Projectile: Trajectory as defined by entry type

Satellite:

Type: Low earth orbit satellite (LEO – Low earth orbit)
Control: Compressed air
Orbit: 300-18,00 km
Contact time: 96 min
Vision: 10m x 10m (normal, night and IR – infra red)
Communication:
C band (3.6 GHz to 7.0 GHz)
X band (7.25 GHz to 8.4 GHz)
Ku band (10.7 GHz to 14.5 GHz) ?
Ka band (17.3 GHz to 31.0 GHz) ?
Lifetime: 10 years

Rocket using Laser Engine

Capability:

1/ Normal, night and infra-red vision - resolution 1.0m X 1.0m.
Further enhance image using digital image picture enhancer
2/ Payload of multiple 50kgs can be assembled in space to meet most design. This design can be in modular form
3/ As a laser beam deflection system for offensive use to shoot any object flying in the sky. The laser source could be on the ground
4/ Anti missile: laser guidance system to shoot missile
5/ Radio frequency jamming?
6/ Transmit audio, video, data, internet and telecommunications system
7/ With multiple satellites could form an offensive weapons against enemy anywhere in the world. The laser beam could be deflected and directed to an enemy target.
8/ Enemy is sitting duck as laser is shot from outer space
9/ Invincible for enemy to attack (no missile could reach outer space)
10/ Monitor what our neighbors are doing?
11/ Monitor terrorist activities
12/ Monitor illegal immigrant movement within country borders
13/ Accurate weather forecast
14/ Topography mapping
15/ Minerals search and geological surveys

Virtually there are no limits …

Laser rocket control

Control systems

Controllers

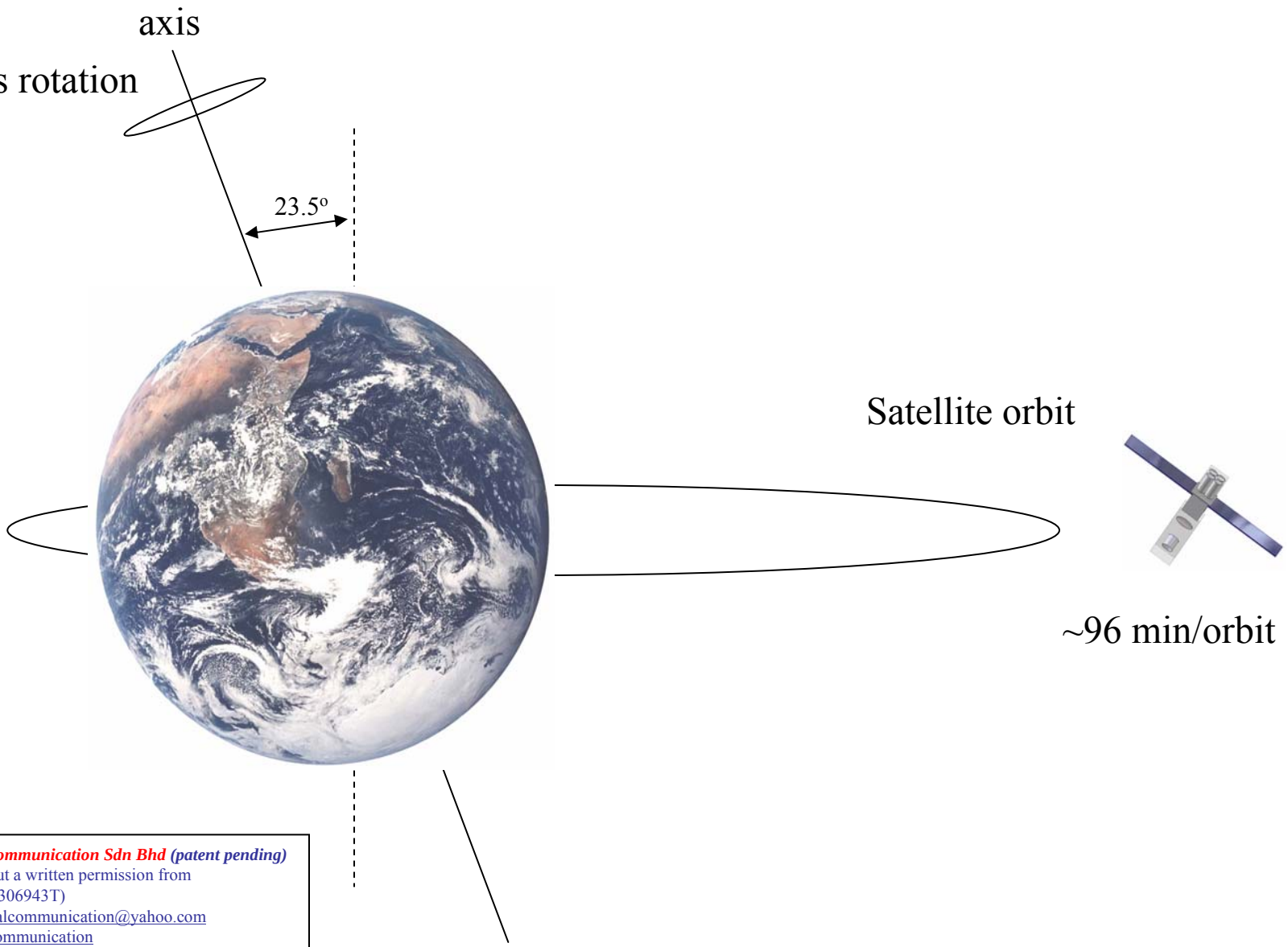
Tracking, aim & shoot

Laser radar & radar

Telemetry & control

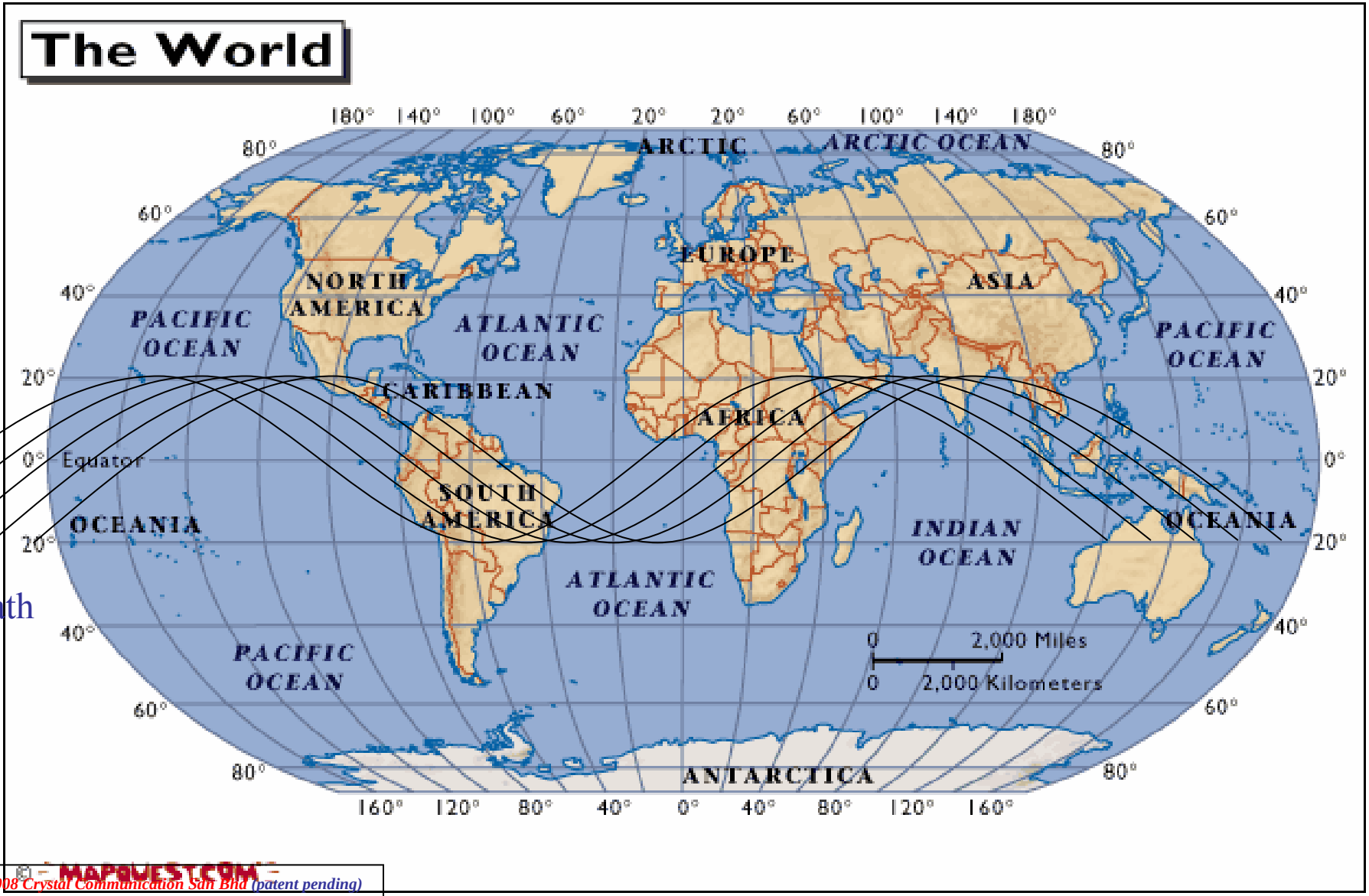
Earth rotation

Earth rotation axis and satellite orbit



Satellite path

Satellite path – LEO orbit



Satellite path

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http://www.geocities.com/crystalcommunication

Business plan and benefits

1/ Satellite broadcasting for Radio and TV stations

2/ Imaging/Vision system (1m x 1m)

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http://www.geocities.com/crystalcommunication