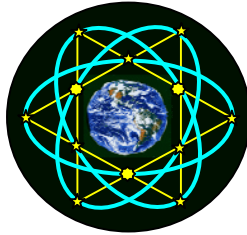


ROSÆ, Inc.

Columbine Village, Unit #205
7901 W. 52nd Ave.
Arvada, CO 80002
April 23, 2008



A Strategy for the ROSÆ – MIRIAH Enterprise’s Startup

Recently, China and the US have destroyed satellites in Low Earth Orbit (LEO), proving that many of our most reliable and necessary assets are in danger of a knock out blow in the early stages of an all out war. Another common altitude for satellites is the Geo-Synchronous Earth Orbit (GEO). This latter orbit is becoming quite crowded, and since their positions are highly deterministic, counter measures are also likely against these assets in a war. This is also true of the orbits used by many other satellites. Whereas, ROSÆ – MIRIAH is the most easily defended of all communication, navigation/tracking, or imaging satellite architectures since it has ***symmetrically*** positioned “forward facing” velocity vectors ***in every solid angle direction.***

The communication path of LEO and GEO satellites is also vulnerable, since that path includes multiple “up - down links” through the atmosphere, and so these links can either be jammed, or its ground stations can be readily destroyed by conventional attack (and too many of these sites are *outside* of Continental US)

Clandestine interception of communications is another weakness in these satellite architectures, whereas a satellite – to – satellite architecture with narrow beam width wide bandwidth links are resistant to intercept consistent with high volume traffic. These linkages can also be further secured from clandestine intercept by the ability of all space nets to use water vapor absorption frequencies.

Coding is yet another method of safeguarding communication traffic from unwanted and dangerous intercepts. The most secure of all coding systems is based on parallel coding with time division multiplex. But parallel coding has a problem with information throughput timeliness in most cases, since this coding depends on correlation at the receiving end with apriori known decoding algorithms, all of which also depend on the time of arrival of the data bits. Obviously then, parallel coding demands ***equidistant*** sat – to – sat links. And that then requires network ***symmetry*** (wherein symmetry is ROSÆ’s “middle name”).

Clearly, ROSÆ's equidistant parallel paths for sat – to – sat links, which span from one hemisphere to an opposite hemisphere, is a full 180° great circle jump ([go to Figure 1 bookmark](#)), which is ideal, since it needs only two sat – to- sat “hops” *in series* (with two *parallel* route choices). Note in Figure 1's legend, how ROSÆ's symmetry and resonant orbits enable a huge cost savings, since its satellites can be “piggy backed” in pairs (and yet their boosters can use the *maximum efficient* Hohmann transfer orbit maneuver). Since boosters are \approx 90% of the cost of any space segment, this cuts costs almost in half, while at the same time increasing reliability of the space segment's insertion (a *second* capital formation asset).

But if one parallel path and parallel coding architecture is good, then a global network comprised of three “mini-nets” would be even better. And so we confidently recommend the numerous technical, tactical, strategic, and cost effective assets which one can readily recognize in the list of communications functions in the MIRIAH*6 architecture ([go to Figure 2 bookmark](#)).

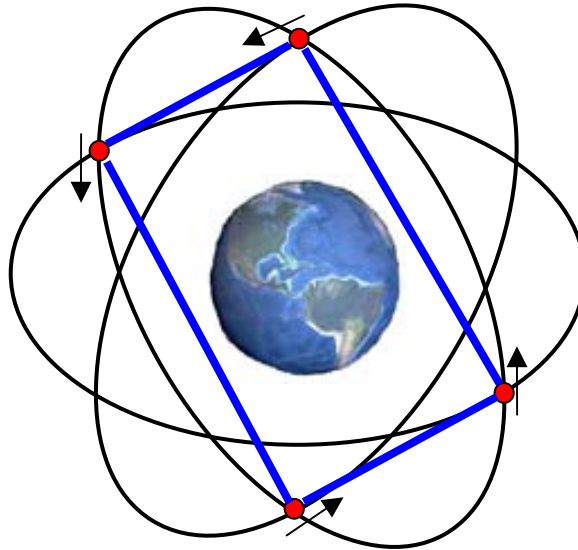
Note next how this strategy will “kill two birds with one stone” in the case of the need to “proof test” MIRIAH before activating its new imaging service (as seen in the middle of the captions of Figure 2). This is most providential, since a ground based test of MIRIAH is next to impossible, since MIRIAH is based on Interferometers, which are the world's most accurate technology for angular measurement (and imagery phase definition too), so it is vulnerable to vibration, “backlash” in test model drives, etc. Whereas, nothing is as stable or as free of vibration as the environment of satellites, [particularly in the case of ROSÆ – MIRIAH's Medium Earth Orbits](#) (MEO). Hence, ROSÆ – MIRIAH's communication assets are “an offer which none can refuse” (within logical military need, technology, cost, “Dual-Use” commercial international markets, etc.).

Once this “proof test” is complete, we can readily activate MIRIAH's holographic imagery to enjoy its many new benefits. These assets will be developed in stages beginning with MIRIAH*3 ([go to Figure 3 bookmark](#)). Following the success of MIRIAH*3, we could then proceed to the full global coverage configuration of MIRIAH*6 ([go to Figure 4 bookmark](#)), and finally move on to the full ROSÆ – MIRIAH multi functional network ([see MIRIAH's Introduction on the Internet](#)).



William H. Grisham, Chair, President

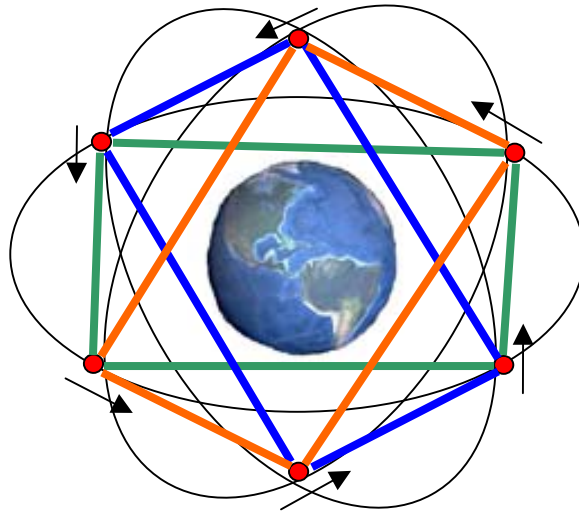
Figure 1



MIRIAH*4
**“Secure Wide Band Global
Communications”**

- No VLA (**VLBI plane is vertical**)
- **One** 90⁰ paired antennae, and **one** drive per satellite.
- 75% global communication coverage
- Parallel, equidistant paths enable parallel coding (equals **maximum** security).
- Symmetry and 180⁰ epoch separation enables “**piggy backed**” Satellites on each booster **w/Hohmann transfer efficiency**.
- **2** Boosters “Piggy Backed” = **4** Satellites

Figure 2



MIRIAH*6 (start up)

“A global communication net with **parallel coding & side lobe free** intra-sat links at **water vapor absorption band** for max communications & security”

3 global hopping rectangular mini-nets:

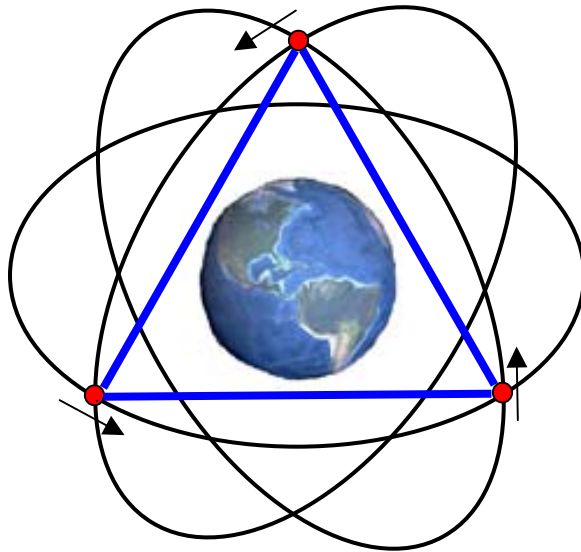
- (#1) is **blue**, (#2) is **orange**, (#3) is **green**
- Each mini-net has 2 global **equidistant** linkages, which uniquely enables **quad parallel coding** with **zero buffer delay**.
- Also for Test/Evaluation/Calibration of Interferometer Triads (proof testing)

4 antenna for 4 parallel paths per satellite needs only one drive to 4 U-joints per satellite.

100% global communications in real time, accessible from any ground site worldwide.

Only 3 Boosters “Piggy Backed” = 6 Satellites (Boosters are 90% of cost).

Figure 3



MIRIAH*3

**“The minimum sparse phased
array for 3-D Holography”**

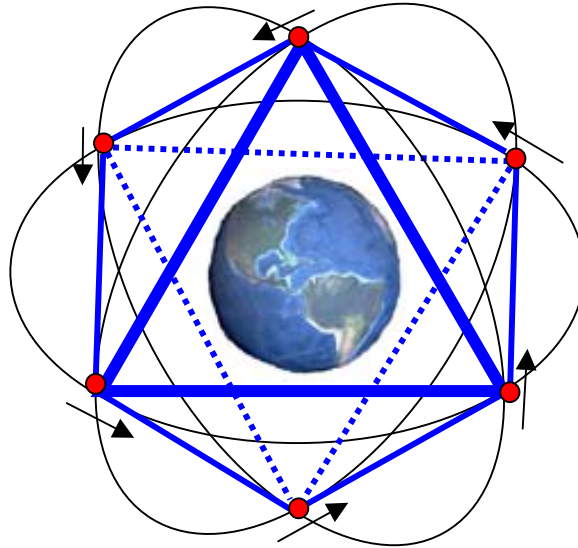
1 VLA Triad

1 antennae pair and 1 drive per satellite

2 Swaths per satellite

3 Boosters – 3 Satellites

Figure 4



MIRIAH*6

**“A global sparse Phased Array
conformal to an octahedron”**

8 VLA Triads

1 drive to 4 U-joints per satellite

4 antenna and 4 swaths per satellite

100% global Illumination coverage in real time

100% global communications in real time

3 Boosters “Piggy Backed” = 6 Satellites