The San Marino Scale:

An anlytical tool for quantifying transmissions from Earth

URL: http://iaaseti.org/smiscale.htm Co-Investigators: Professors Iván Almár and H. Paul Shuch

The Problem:

The SETI Permanent Study Group of the International Academy of Astronautics is tasked with recommending international policy with regard to deliberate transmissions from Earth into Space. Transmission from Earth is controversial, in that nobody can say it is completely without risk. Blanket prohibitions against transmission have been proposed. Others suggest that such policies would violate freedom of expression. We seek herein a middle ground.

The Proposal:

As not all transmissions pose equal risk, we suggest that blanket policies are ill-advised. Instead, an objective analytical scale is proposed, which will allow each specific instance of terrestrial transmission to be evaluated on its individual merits.

Value	Potential Hazard
10	Extraordinary
9	Outstanding
8	Far-reaching
7	High
6	Noteworthy
5	Intermediate
4	Moderate
3	Minor
2	Low
1	Insignificant

The ordinal, integer San Marino Scale quantifies all transmissions from Earth on a scale of one to ten, as a function of signal strength and information content. It provides an analytical basis for establishing policies and protocols regarding proposed transmissions from Earth.

Approach:

- Quantify any transmission from Earth in terms of intensity (which impacts detectability at a given range) and character (which speaks to information content and duration).
- Use these two quantities to establish an ordinal, integral assessment of transmission risk, on a scale of one to ten.
- Use this quantification tool as a basis for international policy recommendations.

Relevant Publications:

- Almár and Shuch, "The San Marino Scale: a new analytical tool for assessing transmission risk", *Acta Astronautica* 60(1): 57 – 59, January 2007.
- Shuch and Almár, "Shouting in the jungle: the SETI transmission debate", *Journal of the British Interplanetary Society* 60(4):142-146, April 2007.

Schedule Milestone and Accomplishments:

March 2005 **(Technology Readiness Level 1)**
- Prof. Almár introduces concept at a SETI conference in San Marino

April 2005 **(Technology Readiness Level 2)**
- Prof. Shuch posts San Marino Calculator to the IAA SETI website

October 2005 **(Technology Readiness Level 3)**
- Investigators present paper at IAC 56, Fukuoka

October 2006 **(Technology Readiness Level 4)**
- Investigators present revised scale at IAC 57, Valencia

December 2006 **(Technology Readiness Level 5)**
- Revised scale (incorporating IAC feedback) posted to IAA website

January 2007 **(Technology Readiness Level 6)**
- San Marino Scale proposal published in *Acta Astronautica*

April 2007 **(Technology Readiness Level 7)**
- Revised scale published in *Journal of the British Interplanetary Society*

September 2007 **(Technology Readiness Level 8)**
- San Marino Scale adopted by IAA SETI Permanent Study Group

TRL = 8

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