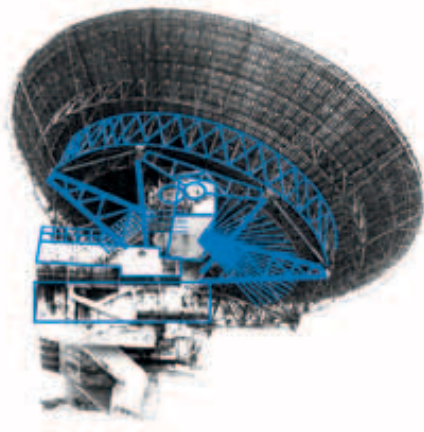




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<http://acoustic.space.re-lab.net>



[1] Riga Center of New Media Culture
<http://rixc.lv>

[2] As part of a ship-to-shore conversation to communicate a telephone number (0499 706090). I used the spoken digits as percussive elements to make *renumber*, an attempt at a systems music, but missed the opportunity to call the number and play back the track to complete the loop.

Previous page: RT-32
Photo: Mukul Patel

Above: RT-32
Graphic: Paul Khera

ACOUSTIC.SPY.LAB

When the invasion of a precision scientific laboratory by assorted media artists quadruples the available computing power, one can forgive a rush of optimism about a possible dialogue between science and art.

Seven years after the withdrawal of the Soviet Army, a 32m diameter radiotelescope in the Irbene forest near Ventspils (an oil transit port in western Latvia) was occupied once more – this time, by a 35-strong army wielding laptops, camcorders, scanners, kilometres of cable, crates full of jacks and plugs, and enough theory to confound the observatory physicists. Organised by Rasa Smite and Raitis Smits, co-founders of E-Lab/RIXC^[1], and Derek Holzer, the *acoustic.space.lab* symposium took place from 4th–12th August between the Ventspils International Radio Astronomy Center (VIRAC) and RIXC. Media artists and activists gathered to explore the interface of art and communications technologies, and to launch an International Acoustic Space Research Programme. Participants who travelled for the opportunity to slide around the dish included L'audible, RadioQualia, Sara Kolster, Robert Adrian X, Radio 90, Siksika Media, Digibodies, Irrational, Makrolab, Clausthome, rigasound.org and ambientTV.NET.

In 1993, the Soviet Army withdrew from the Baltic States, revealing the existence of an espionage centre near Ventspils used to eavesdrop on Western satellite communications. Of the three antennae at the site, the Soviets took the smallest dish, but the 16 m and 32 m dishes were too large to move. Under pressure from the international radioastronomy community, the army held off from blowing up RT-16 and RT-32, instead gifting them to the Latvian government. A handover team did, however, 'prepare' the dishes, throwing metal debris into the mechanics, driving nails through cables, and pouring acid into the electronics. Thankfully, the antennae were built like ships – having been drastically over-engineered by the Soviet Navy. So, despite only nominal support from the Latvian government – VIRAC is classed a 'Scientific Company with Limited Responsibility' – enthusiasts from various Latvian scientific institutes determined the properties of the antennae, repaired the damage, and transformed them into operational radiotelescopes.

The larger antenna, RT-32 ('Little Star'), is remarkably precise – through all the manoeuvrings of the 600-tonne structure, the dish distorts less than 0.5 mm from its paraboloidal ideal. With the installed feed horn tuned to 11 GHz (2.5 cm wavelength), RT-32 has been used to detect radiation from the planets and the Moon (some of which is due to lunarquakes), the Sun and other stars, and extragalactic sources including possible black holes. It has also been used for VLBI (Very Long Baseline Interferometry), in which widely separated telescopes are coupled to form a giant antenna of a size equivalent to the distance between them. But lack of funds to repair leaks in the labs and upgrade the toilet facilities from the Soviet-era wooden hut means that RT-32 is not overrun by astronomers – leaving it open for takeover by a bunch of media vagabonds. (In true festival spirit, we brought in a green portaloos).

acoustic.space.lab set up three working groups at RT-32 under the guidance of Dima (Dmitrijs Bezrukov). Dima deals with all aspects of the telescope – electromechanical, software, making of observations – and is also, if needed, guard, cook, and driver. He was trusting enough to allow us unlimited access, and assisted with all types of reception, but ruled out transmission (since noone had produced the requisite licence).

RT-32 is mounted on a 25 m concrete tower. Just under the dish is the 'submarine' room, complete with portholes and a 15 m conning tower that gives access to the dish surface, the feed horn at the secondary focus, and – after a shaky climb up the supporting lattice – the small reflector at the primary focus. Three groups established residency in various parts of the superstructure. The spy group, led by Makrolab, mounted their own L-band (1.5 GHz) feed at the secondary focus. True to the dish's original purpose, they eavesdropped on communications satellites. Analogue channels on an Inmarsat yielded familial chattering in Malayalam^[2] and a minor drama about a South African stowaway, which rapidly turned into a bureaucratic wrangle. In the spirit of their earlier webstreaming/feedback experiments, ambientTV.NET hoped to place a call and route it via one of these channels, intercept it and then feed it back, but logistically this proved impossible.

Fuelled by borscht and Black Balsam (the other black gold of the Baltics), the acoustic group scaled the dish and rigged up microphones at the primary and secondary foci. Dima lowered the dish to zero elevation and scanned the horizon. Above the wind noise, the mikes picked up rustlings from the



1



2



3

1

The spy group at work

2

Dima atop RT-32

3

The acoustic group

Photos: from the project's common data pool, except 2 by Mukul Patel



Irbene forest, occasional bird cries, conversations on the ground, and a screeching handbrake turn. Movement of the dish also generated spectacular sinusoidal groans and squeaks, consonant in thirds and accompanied by excited squeals from the submariners.

The radioastronomy group attempted to observe Venus, Jupiter, and the Sun. With only a few hours' observation, it proved difficult to isolate any planetary signals amongst the noise, but data from the solar scans was passed through Java applets and translated into MIDI by Zina Kaye (L'audible). Attempts to step down the GHz frequencies into the audible range yielded, predictably, more noise – but this was food enough for Clausthome, who spent hours manipulating it into a warm, dense industrial soundscape. Back in Riga, the material gathered and processed during the four days at the telescope was webcast in a 6-hour programme from the LMS *Galerija* with remote participation from Kunstradio^[3].

[3] archived at <http://ozone.re-lab.net/live.ram>

So, 'science and art': one massive dish in hand, and we didn't cook up anything approaching what Alvin Lucier did with a couple of tape recorders. There was no space for significant dialogue between scientists and artists. But we hope to use *acoustic.space.lab* as a launchpad for deeper, more theoretically and technically informed collaboration. The fact that much of what is observed is very distant not only in space but also in time, the reflexive nature of VLBI measurements being used for geodesy – these are departure points for more specific and substantial projects. At the close of the symposium, VIRAC director Edgars Bervalds expressed his delight that the antenna had been explored in so many ways, adding that, though the antenna ought to be used primarily for science, 'artists can use it to fill the vast spaces in our Universe that science cannot reach.'
