**Before the**
**FEDERAL COMMUNICATIONS COMMISSION**
**Washington, DC 20554**

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| In the Matter of | ) | |
| | ) | |
| Media Bureau Public Notice | ) | |
| Seeking Comment on Over-the-Air | ) | MB Docket No. 04-210 |
| Broadcast Television Viewers | ) | |

**COMMENTS OF**
**THE ENVISIONEERING GROUP**

The Envisioneering Group ("Envisioneering") hereby submits these comments in response to the Commission's Public Notice released May 27, 2004, which asks questions about ways to facilitate the digital television ("DTV") transition and minimize disruption to analog-only television viewers.

Envisioneering is a privately-held technology and market research organization, offering contract test lab, engineering design services and "digital consumer" focused market research since 1983. No single industry sector provides over 10 percent of Envisioneering's income. Following our commitment towards advancing public policy awareness on matters of advanced technology and its potential benefits to society, Envisioneering frequently discounts its services and reports to students, educators, librarians, museum managers, retirees, journalists, authors, policy makers and elected officials from local to federal levels.

Thanks in part to our test lab and contract interoperability activities, Envisioneering enjoys the position and honor of attending and contributing to several industrial and technology standards committees, spanning broadcast TV, cable, satellite, telco, wireless and physical media industry activities, something very few "market

research" competitors have the resources to do. While events at these standards committee meetings are by definition confidential until formal, public standards and suggested practices are voted on and published, Envisioneering's participation does help guide research activities in broad strokes.

Relevant to this proceeding, Envisioneering has been an active participant in the DTV transition process, serving clients in each key stakeholder group. Since 2003, Envisioneering founder and Research Director Richard Doherty has been honored to serve as a special non-compensated special government employee on the nomination committee for the Department of Commerce's National Medal of Technology.

**Overview**

Envisioneering is pleased to offer to the Commission elements of our ongoing consumer retail exit survey data, which may lend some new insight on consumer DTV confusion, understanding, take-up rates and transition scenarios.

Interviews with more than 1,000 consumers between January 2003 and June 2004 indicate much more misunderstanding of antenna-dependent analog and High Definition TV using over-the-air TV sources than clear understanding of "Digital Cable" and "Digital Satellite." Based on this research of multi-TV owners, key concerns include:

- High expectations by consumers that they can depend on over-the-air TV in times of extreme weather or national emergency.
- Large consumer ignorance about the existence of and potential for multi-channel over-the-air DTV.
- Vulnerability among senior consumers, who appear to be quite confused as to what will happen in any so-called "analog-to-digital transition."
- Confusion among low-income consumers and renters – regardless of age – who also are ill-informed as to how DTV is different from today's analog TV or

HDTV systems which they believe (out of necessity) to be out of their anticipated affordability.

- Broad misunderstandings by consumers as to whether they get their TV service from an antenna, cable, satellite or some combination when served by an ad-hoc MATV system. Indeed, such MATV systems may enable just a handful of DTV signal converters to serve thousands of consumer households at once.

- The need to expand, not reduce, dependency on terrestrial DTV signals – during and after the transition. It is important to recognize the need to accommodate the tens of millions of portable TVs, and the tens of millions of existing (analog) TVs operating daily in public places, which are viewed by tens of millions of Americans outside their homes during work, meals, studies, medical care and play.[1]

**Consumers Depend Upon Over-the-Air Television During Emergencies**

Consumers that plan to retreat to the safest rooms in their houses in times of a pending tornado, winter storm, hurricane or flood report that they are very unlikely to be in a room where their "main TV" is located. Instead, they expect to be depending on portable TVs in basements, storm cellars and, in the case of floods, in higher-elevation rooms. These portable TVs, of course, rely upon batteries and antennas for signal access.

Historically, in times of a local weather emergency or other local or national emergency, people turn to their TVs for information. They will continue to look to their DTVs for broadcast access, which means battery powered DTVs and even DTV antenna adapters for some existing portable and mobile TVs (such as those already installed in RVs, motor homes and buses).

**Many Consumers Are Confused About the Source of Their Television Service**

Many people surveyed who rent houses, apartments or dorms, or who spend time in health care facilities, stated that they had "cable" even though they actually had over-

[1] Attached hereto is a "white paper" entitled *Terrestrial Digital Television Receiver Market Much Larger Than Many Believe* published recently by Envisioneering. The white paper details the number of viewers who rely upon secondary and portable TVs dependent upon over-the-air service.

the-air TV via a wall-mounted Type-F connector. Often, these are systems which use a single Master Antenna TV distribution system ("MATV").[2] Also skewing the number of "cable" households are those homes which receive one or more "cable TV" services via that same MATV antenna system. Some people know these signals come from satellite or cable sources and are being "shared" with their household and neighbors. Others mistakenly report to some market researchers that they have "cable" when they simply do not.

Given this confusion, additional consumer education and surveying appears vital before decisions on analog shutoff or any forms of DTV tuner or DTV set subsidization or credits are considered.

**Consumers Confused About DTV Transition**

Envisioneering's research indicates that more consumer education and surveying are needed regarding the DTV transition. A decade ago, when consumers were asked about their interest in "satellite TV," almost all pictured 8-to-10 foot ugly dishes. Yet that year, DirecTV ushered in a new era of compact antennas and low cost receivers. Now, over 21 million US households enjoy "satellite TV." Similarly, those consumers polled about "Antenna DTV" today are also unaware of what smaller, smart antennas and multi-channel TV would mean to their TV programming access, choice and cost versus subscription satellite and cable alternatives.

[2] It is noted that many MATV systems fall outside present FCC jurisdiction and simply "merge" analog TV channels and select cable or satellite channels. Indeed, some MATV systems actually pass-through – unaltered – local broadcasters' ATSC RF signals. MATV operators often place just a handful of "premium" channels in between the lower VHF channels 2-13, leaving much of the UHF spectrum untouched.

Fewer than one in twenty consumers surveyed were aware of any planned shut-down of analog TV. Instead, they presumed traditional market forces would dictate when digital would displace analog, similar to how CDs superseded analog LPs and DVD players continue to displace analog VHS decks.

On average, one in 12 consumers surveyed owned an HDTV set or TV screen they thought was capable of showing HDTV programming. Almost none (under 2 percent) acknowledged that they owned a so-called "Digital Television" or "DTV." Indeed, while the term HDTV is known, the terms "DTV" and "Digital TV" are far less understood.

Given this consumer confusion, assisting people to ensure that they have at least one DTV receiver in the household may be necessary, through coupons, tax rebates or subsidization of DTV tuners.

**Older Consumers Are More Likely To Rely Upon Over-the-Air Television**

The most troubling finding in Envisioneering's research (which begs for further investigation) is that, even though consumer electronics buyers over age 50 accounted for less than one-quarter of the approximately 1,000 people surveyed, these elder consumers were the most knowledgeable about TV antennas and were 60% more likely than younger consumers to depend on a TV set connected to an antenna as their main TV program source. As more and more seniors enter a phase of life where cable and satellite subscriptions are far less affordable than medical prescriptions, these members of society (who are less likely to respond to internet and phone surveys) should be more accurately counted.

**Many People Depend on TV Outside Their Residence**

The key elements of our research show that people who depend on free over-the-air TV for their primary news, entertainment and sports programming view TV not only while at home, but also while at work, in public spaces, commuting and at vacation spots, ranging from their own backyards to the beach to the mountains to a sports stadium.

**The Costs of DTV Tuners Will Decline With Increasing Economies of Scale**

DTV tuners can expect to enjoy similar economies of scale as DVD players. Indeed, the royalty costs for DTV receivers (even Dolby decoder-equipped units) are lower than the DVD industry's royalty and IP administration costs.

**Local Antenna Placement May Become A Regulatory Issue**

The FCC may find citizens looking toward the Commission for guidance on local antenna placement should DTV live up to a fraction of its free over-the-air potential and its ability to compete on a cost-effective basis with subscription satellite and cable services, and slowly emerging wireless and video telephony IP services.

**Data Sampling Methodology**

Envisioneering's monthly consumer surveys are focused principally on the Northeast corridor (from Boston to Washington, D.C.) and on California's coastal cities ranging from San Diego to San Francisco.

Over 1,000 consumers were questioned (while exiting from leading retailers with a consumer electronics purchase in hand) during the period of January 2003 to June 2004. Envisioneering did not (and does not) have any external sponsor for this questioning – the data was gathered purely for internal Envisioneering informational needs. The data was acquired as part of our traditional East and West Coast consumer electronics buyer

surveys, conducted one-on-one. While we are still considering preparing a report for sale, no decision has yet been made.

**Additional Informed Consumer Survey Information Is Highly Desirable**

In considering the FCC's call for information, Envisioneering believes more specific consumer surveys on certain aspects of the transition will lead to a smoother transition for consumers, broadcasters, programmers and policy makers.

In considering a report, Envisioneering believes that many multi-program distributors – particularly cable MSOs and the two leading satellite services are not keen on having free over-the-air multi-channel DTV or multi-channel premium subscription services evolve. Yet Envisioneering believes a healthy start for DTV will ensure even better services and more price competitive services from cable and satellite operators, along with new entries expected from digital wireless and IP video telephony carriers. Advances in DTV tuner sensitivity, selectivity and power reduction lead Envisioneering to believe that affordable, impulse-purchase DTV converters and premium devices will evolve.

To gain further insight, Envisioneering would next look to surveying TV antenna installers and service people, installers who deploy a broadcast antenna in addition to a satellite antenna and service people who install and maintain MATV (Master Antenna TV) antennas and amplifiers on behalf of dozens to thousands of tenants.

Envisioneering believes these MATV audiences have been very poorly represented in earlier surveys of the state of consumer signal access. For example, in many urban and suburban areas, a handful of DTV to analog TV re-modulators in the MATV system may enable dozens to thousands of tenants to receive DTV signals at one

time. Envisioneering believes such scenarios need to be better surveyed and understood before hard transition policies are enacted.

Boosting consumer awareness of multi-channel free over-the-air DTV and emerging subscription services from pooled broadcaster digital reserves will certainly accelerate consumers' interest in and acceptance of add-on DTV tuners and integrated DTV receivers.

Until consumer inclinations and intentions for free over-the-air multi-channel and subscription multi-channel DTV are better known, we suggest the Commission not finalize plans for DTV subsidization, coupons or tax credits.

Respectfully submitted,

**THE ENVISIONEERING GROUP**

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cc: John Berresford (FCC/Media Bureau)

Informed Intelligence.

Envisioneering

**Viewers Rely on Secondary and Portable TVs**

# TERRESTRIAL DIGITAL TELEVISION RECEIVER MARKET MUCH LARGER THAN MANY BELIEVE

**By RICHARD DOHERTY**
**Research Director**
**The Envisioneering Group**

Today, nearly 400 million analog television sets are in frequent use in the United States and Canada – attached to various combinations of broadcast antenna, basic cable, and either satellite or cable boxes. Envisioneering estimates that more than half of these sets receive their primary entertainment, news and sports via antennas alone, representing significant DTV business opportunities for broadcasters and TV manufacturers alike. While much of the focus in the digital television (DTV) transition has been on the majority of households whose primary TV is served by cable or satellite, broadcast-only TVs are receiving increasing attention by the FCC and Congress in the context of reclaiming the analog spectrum at the end of the DTV transition.

Based on our recent analysis of the television landscape, Envisioneering forecasts that, during this decade, tens of millions of small-screen DTV sets will be best reached by free, over-air signals via attached, indoor antennas. Indeed, the public depends on some 59 million antenna-only TVs while on the go, on the job and in public facilities. These

include healthcare centers, schools, restaurants, waiting rooms and RVs among others – where viewers are more often TV broadcast dependent than not.

As the DTV transition marches on, large-screen HDTV will continue to grow exponentially as the ultimate digital broadcast entertainment experience. At the same time, over the next decade, tens of millions of portable TVs will need to be replaced: in bedrooms, guest rooms, dens, patios, playrooms, children's rooms, kitchens, dining rooms, workshops and bathrooms. These TVs generally measure 20 inches and under, with many between 9 and 13 inches diagonally. The vast majority of these rooms are not equipped with cable TV Type-F connectors or DBS satellite signal access. Instead, these sets rely on combinations of a shared central (rooftop or attic) antenna or simple indoor antennas for broadcast reception.

In Envisioneering interviews with consumers, TV viewers by and large do not expect this TV signal- reception access to change as they enter the digital world. Indeed, the cost of a new portable broadcast DTV will very often cost less than a year or two of basic cable. Also, as a new generation of LCD screen TVs appeals to viewers, driven by lower prices and attractive, space-saving designs, thin and slim 20-, 17-, 15-, 13- and 10-inch LCD TVs will be ripe for ATSC digital tuners.

Envisioneering estimates that 184 million small-screen TVs are now in daily to weekly use, and 59 million additional public-facility and handheld sets. Over time, consumers will replace these aging, VHF/UHF analog-tuner TVs with cost-effective new DTVs.

The FCC's digital TV tuner mandate will ensure that by decade's end, most homes will enjoy two or more of these DTVs, regardless of whether they have also purchased an HDTV set.

These figures include an estimated 35 million small-screen analog TVs that are in daily use in schools, dormitories, hospitals, clinics, physicians' offices, retirement homes and hospices, museums and public spaces, transportation depots, restaurants and pubs, sports centers, repair shops, motor homes, buses, limousines, RVs and trailer homes. The majority of these TVs are today served by broadcast free-to-air TV services, and rarely by cable or satellite.

Research indicates that another 24 million handheld TVs will likely be replaced this decade. These owners include commuters, guards, overnight-shift workers, sports fans and young people. Existing handheld and neck-strap TVs include flat CRT and LCD screen portables with screen sizes of 4 inches or less.

While the largest-screen HDTVs will enjoy explosive growth– both for replacement large-screen analog TVs and new home theater installations – the majority of new DTV unit sales in the second half of this decade will be for 20-inch and smaller receivers, including new generations of mobile devices served by DTV broadcasting.

# # #

**AUGUST 2004**

**Primary Consumer Household Television Signal Sources in Daily to Weekly Use (United States & Canada) (Excluding Public & Handheld)**

| TV Signal Source | Total (millions) |
|---|---|
| Broadcast | 184 |
| Cable | |
| Advanced Analog | 59 |
| Basic Cable | 22 |
| Analog Total | 81 |
| Digital Cable only | 57 |
| Cable Total | 138 |
| DBS Satellite | 37 |
| GRAND TOTAL | 359 |

Data in this report refers to first-hand consumer interviews in select US and Canadian cities during 2003 through to Winter/Spring 2004

Envisioneering Analysts: Richard Doherty, Joan van Tassel, Dan Sokol, Bill Fulco, Michael Pierry

Envisioneering - Informed Intelligence www.envisioneering.net

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