



ATRA and IST members are encouraged to forward this newsletter to friends and colleagues or post it on appropriate websites.

STEPPING FORWARD TO GLOBAL CHALLENGES

International bonds of PRT cooperation were strengthened at PCC6 – the 6th of the annual Podcar City conferences – in Berlin last September. Organized by the Stockholm-based Institute for Sustainable Transportation in close cooperation with ATRA and the Kompass coalition of Swedish cities interested in podcar implementations, the gathering of over one hundred professionals and public officials expressed intensifying concerns about clean, sustainable energy and the need for global cooling. Prominent German Green parliamentarian Hans-Josef Fell outlined the problem and described proactive solutions and advanced transit is a major component. Deliberations were “very intense” according to ATRA vice president Ingmar Andreasson. Globalist Nathan Koren labeled them “thought provoking”. A select group continued energetic exchanges in Stockholm and Uppsala.

No breakthroughs or surprise projects were announced. Matt Lesh of the USDOT, however, repeatedly called for greater cooperation between Swedish PRT efforts and research at the Federal Transit Administration, as framed by a Memorandum of Cooperation that spells out a program with future “deliverables”. His focus is on last-mile solutions and station district development. This was also true of Professor Goran Cars of the City Planning Department of Sweden’s Royal Institute of Technology. Trends to urban living continue, and station areas are “more interesting”.

Historic Perspectives

The conference opened with Kompass chair Hans Lindqvist calling for all to be part of history. “Let us be the wind for the future,” he urged. This was echoed by California transit guru Rod Diridon: “I’m afraid of what’s happening to our Earth,” he confessed as he described a more sustainable future of high-speed rail complemented by PRT networks serving major new development around stations. Solar energy advocate Ron Swenson reinforced this: “I can’t believe we’re still burning things. How can we better move the world?”

Keynote speaker was noted German Green Party parliamentarian Hans-Josef Fell, who explained that all parties support a transition to renewable energy. He interprets the current Euro crisis to be fundamentally an energy crisis that can be solved by a “fast global switch to renewable” and announced his new book *Global Cooling*



Magnus Hunhammar – at right with microphone – greets some of the PCC6 delegates at the boat Icebreaker. Christer Lindstrom is in the center with light blue shirt and dark tie.

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(www.crcpress.com). Renewables accounted for 6 percent of German energy in 2000: their share was up to 17 percent by 2010 and stands at 25 percent today.

Surprises and New Perspectives

Surprising many podcar/PRT enthusiasts was news that the small Austrian developer Coaster has caught a second wind. Although their first installation at the Swiss resort of Arosa, which opened in 2007, is a shuttle without need for off-line stations, their long-term vision encompasses PRT functionality with tight turning radii and very steep grade capabilities. Patrick Teufelberger explained that a new management structure was put in place last year and emphasized how Coaster sees easy integration into buildings.

ATRA chair and Princeton professor Alain Kornhauser highlighted the need to tie podcars to increases in land value. This, not system costs, will drive development and free us from the “enslavement” to car driving we must endure to have the flexibility it provides. PRT is the car without its “baggage”.

Andreasson sees many research problems that are opportunities for Swedish-US cooperation which could involve not just USDOT but also Princeton, the University of Maryland, West Virginia University and Chalmers Institute of Technology in Gothenburg. Topics include areas of standardization, such as guideway envelop, grade and curvature, definitions of availability and safety, and means of evacuation. Perhaps the most promising area is open source controls. Swedish rail authorities have approved Vectus controls, and Gene Nishinaga, who is cooperating with Bengt Gustafsson of Beamways, has been through the California controls certification process.

Successful Strategies and Beyond

Other standards might deal with recyclability of materials and braking. Strategies should involve conventional transit officials, who can see PRT benefits in the form of increased ridership, modern workforce opportunities and urban livability and healthy communities. Another strategy of interest is to involve the auto industry as it moves to smarter and smarter cars.



There is a good chance that the 7th Podcar City conference will take place in Washington DC. Stayed tuned.

Last August the US Snow and Ice Data Center publicized evidence of a “dramatic overall decline” of Greenland’s ice sheet” – another strong signal of long-term climate warming.



TOP: Your editor hurries down from a remaining section of the Berlin Wall at the start of PCC6 last September 19 in Berlin.

LEFT: Europe's take on APMs is different. Metros are now driverless. Smaller APMs were envisioned for France, as this one by Soulé last century.

EDGING UP TO PRT

The latest news from projects using “modern” PRT, as seen and heard during *PCC6*:

Heathrow: John Hammersley reported in Berlin that the BAA is still looking at expansion of the *Ultra* shuttle, but no firm commitments have been made. The operation is closing in on its second year of full operation without major safety and security issues.

Masdar: Robbert Lohmann reflected on two years of operation of the *2getthere* shuttle at Masdar in Abu Dhabi. Asphalt is better than concrete, but that was ruled out. O&M costs were 25 percent lower in the second year. They have reduced managerial staffing needs from two control managers to one (with a backup available). Average daily ridership is a light 900.

Suncheon: Service in a protected natural environment is targeted to start next April. The buzz was on vehicle size: maybe large enough to carry sixty passengers. Seismic requirements mean that there is no economy in taxi-dimensioned guideways. Details of the larger vehicle were not made public. Like Heathrow and Masdar, the installation will be a shuttle.

Morgantown: State officials have committed to a \$15-million budget to improve reliability and ensure long-term viability of the WVU PRT.

As for impending project decisions:

San Jose: Final reports were made available October 26. Although a 10km, 11-station network has been analyzed and found feasible, there is no commitment to go forward yet. Federal and state funds would help make it happen. The FAA is as likely to take interest as FTA. One problem is lack of a public regulatory framework. The City aims to reduce solo driving by 40% by 2040. Forty (percent) by (year two thousand and) Forty.

Santa Cruz: Local activists have publicly pointed out that PRT can provide welcome new access to the University of California campus there, producing a reduction of carbon emissions. This is in addition to more obvious benefits of improved transit access to the business district and beach attractions.



Stockholm: The concept of a PRT network serving University of Stockholm, the Royal Institute of Technology and the Karolinska medical campuses is stalled. Sweden's second city Gothenburg may happen sooner: Chalmers Institute of Technology wants to add jobs without increasing street traffic. A 2.7km, 7-station PRT network is being analyzed. The City Architect sees an opportunity to create a guideway and stations of beauty.



TOP: David Little of Lea+Elliott was one of many working to stay abreast of world PRT developments at PCC6.

LEFT: Solar entrepreneur and environmentalist Ron Swenson brought fresh perspectives to PCC6 discussions.

NEW APM COUNT 161

Six new APMs started regular passenger service this year. In many ways, the center of this upward trend is Makkah – pivot point to followers of Mohammad (pbuh). This is for 2012. The Count was 155 as last year closed. Today we stand at 161.

There is no market activity in leisure settings – except perhaps the handful of indoor rides that England's WGH manages to build. Two airside and one airfront APM opened in 2012. One is the third shuttle by Bombardier at Las Vegas Airport and the other is in Cairo – the largest city of the Middle World that regularly prays toward Makkah, where a special system with controls by Thales now helps move pilgrim surges during months special to Moslems.



Not far from Makkah is the booming Saudi capital Riyadh, where an APM will soon open within the business district. One already serves a women's university.

Driverless Metros Sparkle

An 11km driverless VAL system supplied by Siemens now carries passengers in Uijeongbu, connecting passengers to Line 1 of Greater Seoul's metro network. The other "new" metro-scaled APM is the successful retrofitting of Paris's Line 1 – driverless with new station platform walls and doors. It is a magnificent story itself – done without disruption to daily service over many years of work. (Enough was done that it was perhaps prematurely counted in 2011. Minor work will continue into 2013.) But it is essentially done – smoothly and safely: a harbinger of the flood of driverless metro projects in the APM Pipeline.

The Makkah Metro started test service in 2010. Operations were initially manual. It was eventually extended to some 18km of route. Thales supplied communications, controls and training for about \$140 million. Riyadh and Jeddah are planning multiple lines. Kuwait, Bahrein, Iraq and Iran have numerous transit plans.

Metro projects, increasingly fully driverless ones, are being built all over the world (except in the mainland US!). Get ready for an upsurge in the next issue's annual *APM Pipeline* numbers.

You can view the 161 APMs by visiting www.airfront.us.

JOIN ATRA OR RENEW YOUR MEMBERSHIP

by Stan Young, ATRA President

This year ATRA took on a new high level of activity. Perhaps this is because of emerging interest in dramatic urban mobility reform. In 2012, ATRA was active:

- *Technix 2012* at the University of Maryland (January – To be repeated January 13, 2013)
- Airport land value workshop last March
- TRB conf / driverless cars in Irvine this in July
- 6th *Podcar City* conference in Berlin in September (with follow-up in Sweden)

- Virginia Environmental Assembly, October 18-19
- ASCE *Urban Systems* conference: Paris, this Nov 11-14
(contact pmuller@prtconsulting.com)

Our website draws many viewers and inquiries, our chat groups are buzzing, and bimonthly issues of *TransitPulse* reach well beyond ATRA members and their friends. We have launched an *Academic Research Committee* (ARC) under the energetic leadership of Shannon McDonald and Wayne Cottrell.

Chronic urban congestion is a reality worldwide. ATRA depends on member input and participation. Financial resources come from membership dues and donations. Please consider a tax-deductible donation this year as you renew your membership (\$50). You can specify what concerns and priorities you see as important – climate change, oil addiction, urban congestion and inaccessibility or simply a keen interest in transit technological advancement.

If you are interested in serving on the Board of Directors, ARC or as an officer, please let me know. Shoot me an email at seyoung@umd.edu.



...PRT guideways within a proposed New York skyline

AMRITSAR PLAN ENHANCED, DELAYED

The route proposed for the Ultra-Fairwood PRT project to serve the holy city of Amritsar has been changed to afford a better view of the Golden Temple itself and to rectify other urban design problems. The changes will inevitably slow project implementation.

Construction was expected to start "any minute now". The modifications will lead to changes in the design and engineering, the journey times and routings as well as the timing of the vehicle manufacturing, and may also impact the private financing of the project.

Amritsar is a dense and difficult environment to design for and operate in. The engineering for the prior route was chosen at the city's behest and with their blessings. It took about 24 months of detailed surveys and design review to reach consensus.

Moreover, India is a country with great resources but also fundamental limitations. Last summer, 620 million residents were left stranded without power, most for several days.



ABOVE: Retired Harvard landscape architect professor Chuck Harris envisions an easy fit of APM guideways near buildings.

LEFT: The outlooks in India are not the linear, fast-cash drive of New York and London.

DRIVERLESS METROS

The English-speaking world is pretty dumb about how to run the backbone of mass transit. In the US, the word “metro” sounds a little communistic to many – for the 43 percent. A heavy rail project is to many just another Big Government plot.

London’s transit chief is saying “no way” to the Mayor’s desire to introduce driverless operation to the British capital’s beloved *Tubes*. The unions are whipping up campaigns to block the truth of French (and now global) competence in full automation of train movements. London’s mayor wants to start trial runs.

In Paris, the short but impressive Line 14 is driven (managed) from a central depot and regularly carries almost 400,000 passengers a day. Over the last several months, a world first has quietly unfolded. The retrofitting of station platform walls and full automation on “classic” Line 1 is now essentially complete. It’s Paris’s busiest line – carrying over 500,000 passengers a day. No one ever did this before.

The Coming Surge

Moreover, Paris is passionately embracing a driverless transit future in a visionary, transformative project known as *Grand Paris*. This is an evolving plan for a ~155km orbital around Paris, interconnecting the many rail lines radiating out from the French capital and serving urban development sites and working class suburbs. This bold plan has survived the departure of Sarkozy, It will redefine the structure of metropolitan Paris as this century unfolds. Safety is a priority, and it’s driverless.

Outside the UK and the USA, a driverless metro is no longer controversial news. This is an active and profitable industry. Singapore is working hard on a 42km *Downtown Line*. Larger scale networks are planned for Kuala Lumpur.

How pitiful is London’s uniformed debate! Sad to say, it’s not much better in NYC or DC.

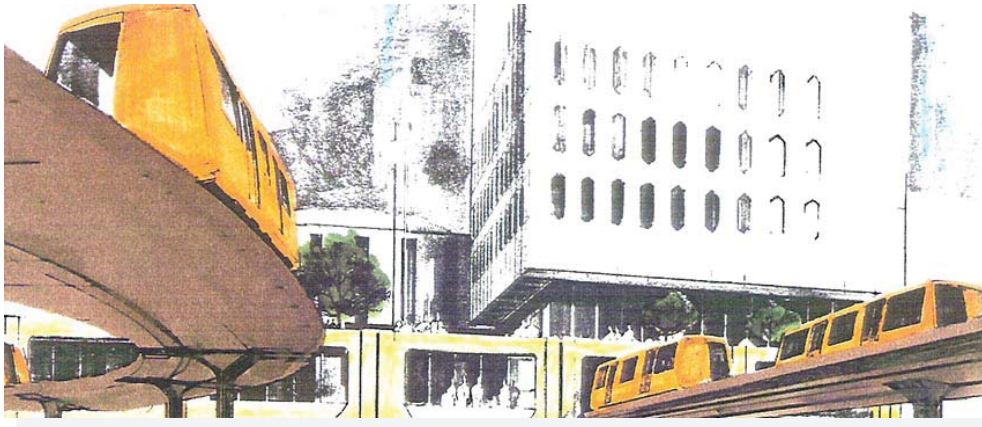
DEMOCRACY EAST OF SAN JOSE

ATRA member, electric vehicle entrepreneur and community activist Rob Means is running for mayor of Milpitas, California. Voters will decide this month between him and the incumbent. Means describes himself as a progress motivated by the need for environmental stewardship. He has plans for sustainable energy, food and jobs. He also has plans for a PRT network to distribute from and access to the large regional station that will soon dominate much of Milpitas when BART is extended to neighbor San Jose.

Late last month the *San Jose Mercury News* endorsed his “quixotic” campaign. To offer support and encouragement, call Rob at (408) 262-8975 or email rob.means@electric-bikes.com.



Metro markets around the world are strong, such as this portal on Istanbul’s metro.



Technix is a good venue to explore new ideas and reexamine old ones, such as this early Westinghouse development vision.

TECHNIX: JANUARY 13 IN THE BELTWAY

Next year's annual free-ranging exchange of ATRA thinking and research will take place Sunday, January 13 at the University of Maryland. It is your chance to get feedback on your work. -- but hurry: the program is already filling up. If you want a time slot, email lfabian21@gmail.com now.

ATRA President Stan Young will talk about the efforts of New York State academics to do a follow up on the Ithaca PRT study funded by NYSEDA – the state's energy research agency. Shannon McDonald will outline a vision for ATRA's new Academic Research Committee. Ingmar Andreasson will bring news of plans in Sweden.

Software consultant Tyler Folsom will speak about developments in driverless cars in Japan, at Google and elsewhere in the US and how they relate to advanced transit. Larry Fabian will describe the essence of what a city is and how the city planning profession is trying to cope with their evolution and the need for better urban mobility.

The early Technix registration fee for ATRA members is \$35 (\$50 for non-members). Coffee+ and lunch are included. After December 31, it will be \$45 (\$60). Visit www.advancedtransit.net or email Kjensmo Walker at kjensmotwalker@gmail.com.

GOUGING PUBLIC OPINION

The editors of *Bloomberg.com* ran an anti-establishment article on urban infrastructure last August 26. Journalist Stephen Smith points to the frightening dysfunction of our transportation engineers, contractors and consultants.

The Bloomberg article describes how regional technocrats and decision-makers are led down a path to stupidly high project costs. Smith calls out the price tag of \$5 billion for two miles (3km) of New York City subway. There was plenty of time to think it through: the Second Avenue line first proposed in the 1920s! Yes, the Big Apple is expensive, but Smith notes that these two miles are under a straight, broad arterial without tunnels, towers or bridges to jack up costs. Moreover, a two-mile line will make no transport sense unless the planned 8.5 miles (13.7km) are built at an estimated cost of over \$17 billion.

For Boston's Big Dig -- a four-mile (7km) of highway project -- Smith cites a figure of \$24 billion that includes interest. He also hits hard at high-speed rail and Amtrak lust to spend \$151 billion on the Boston-NYC-Washington corridor. Of California's \$68 billion HSR plan, French officials at SCNF say it can be done for \$38 billion. So it is curious that Bloomberg editors put only "transit" in the title -- *US Taxpayers Gouged on Mass Transit Costs*.

An Engineering Deadend?

This is infrastructure dysfunction at a scale hard to fathom. Smith's anxiety must be similar to what a few dinosaurs felt right before mass extinction. Is there no way out?

Bereft of knowledge of podcar potentialities, Bloomberg editors, Smith and the dysfunctional infrastructure system they decry -- none of them -- see the vastly superior benefits that major investment in **advanced** transit can bring to the US's 300 million gas-guzzling vehicles that congest American Interstates, highways and old urban districts.

Communicating a convincing **Podcar Vision** is the task before us.

HUSH, IT'S BRISTOL -- AGAIN

An area slated from redevelopment near the English city of Bristol is considering a four-station APM to connect it to the city center and manage parking. This would stretch only about two kilometers serving over 15,000 new employees expected when redevelopment is done, with four stations. That doesn't sound like a PRT project. Since Ultra has its origins and its current offices in Bristol, Ultra interests are not absent. Clearly this line can later be extended into a larger network in which the dynamics of PRT become attractive.

A PRT plan for Bristol gained some traction, but collapsed in 1992.



ATRA members Bill Newton (far left) and Frank Videgar (next to him) chat with two Virginia environmentalists at their annual meeting in Alexandria last month.

AIRPORTS

Cairo, Egypt: Overshadowed by the political upheavals now known as the Arab Spring, an elevated 1.8km APM quietly opened last May to connect T-1 and T-2/3. Supplied Leitner-Poma, it uses air-cushion suspension reminiscent of Otis technologies operated at several other airports around the world. With two trams that can accommodate 170 passengers each, system capacity is rated at 2000 per hour. Included in the \$100m contract is five years of O&M.

Frankfurt, Germany: Also opening out of view of many was a 300m APM between a parking garage and a large (140,000 sqm) high-tech office complex near FRA. The elevated cable-drawn system by Leitner passes over highways and rail. Its capacity is rated at 1500 pax per hour.

Pisa, Italy: Reinforcing Leitner's entrance into the airport APM field is a new \$100m contract to supply a 1.9km, 2-cabin APM linking the small airport to the central rail station with an interim stop at parking. The project is a public-private partnership involving operation of the parking facility. It is forecast to carry 2m pax per year when it opens in 2015, growing to 2.6m by 2020.

Europe: With economic woes curbing growth in most air traffic in western Europe, the east may generate future airport expansions. There is talk of a new airport for **Warsaw** in the long term, and Russian prime minister Medvedev has directed the Ministry of Transport to study the feasibility of a fourth airport for **Moscow**.



Otis has supplied several air-cushioned APMs, such as this one at Detroit Airport, that sound similar to the Leitner-Poma project in Cairo.