TRANSITPULSE
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News of Advanced Transit
ATRA members are encouraged to forward this newsletter to friends and col leagues or post it on appropriate websites.

March/April 2013

PODCAR.ORG AND PCC7

The International Institute of Sustainable Transportation (INIST) has announced the relaunch of *www.podcar.org* as a reformatted and revitalized international platform for news and views on urban mobility innovation. We have assembled a team of podcar-inclined professionals and commentators who will keep us in the forefront of sustainable urban transportation. The importance of change in how we move around in and out of cities, how we use valuable land, how we impact the environment and not least how we can drastically increase efficiency and reduce accidents are all compelling reasons to do what we do at this site. No-one can do everything, but everyone can do something.

That's Tillsammans -- Swedish for together. The following people are helping us move forward:

Lawrence Fabian from Boston as editor will bring his international contacts and exchanges to guide this *podcar.org* entreprise.

Kjensmo Walker from the Twin Cities will recount her traveling outreach to students and professionals wanting better cities through smarter mobility. She brings a Minnesota perspective of young adults who rely on public transport and of CPRT.

Peter Muller is originally from South Africa, now long based in Denver with an airport background who will continue to track live interest in PRT whenever and wherever it occurs.

Sam Ellis of San Jose will report on emerging student PRT design activities in Silicon Valley and beyond. This is focused on INIST's – the Solar Skyways Challenge.

IN THIS ISSUE

ATRA Chair Alain Kornhauser and USDOT researcher Matt Lesh glow with thoughts of brighter urban mobility at last year's PCC6 at the Technical University of Berlin.

We look forward to a breakthrough seventh Podcar City Conference (PCC7) on October 23-25 in Washington DC, this time in active cooperation with the US Department of Transportation and ATRA. There have been six energetic international Podcar City gatherings. Already several like-minded organizations are interested in cooperating to make PCC7 bigger and better to lift implementation of sustainable transportation to a whole new level.

Visit *www.podcar.org* often and register to receive updates. Comment in our blogs and discussion boards. And mark Oct 23-25 in your calendar!

NEXT MONTH IN KOREA

The manufacturing and engineering excellence of Korea has come to ATN. Next month the first commercial Vectus system will go into service at a nature preserve along the southern coast of South Korea. It will serve visitors to Suncheon Bay where the 2013 International Garden Expo will take place in April.

Guideway construction was completed last fall. Electrification, communications infrastructure and ancillary equipment have been installed at the two stations and along the 5km length of elevated track Test runs began in January. The fleet size will be forty, but it is unclear how large the vehicles are and whether they run singly or paired.

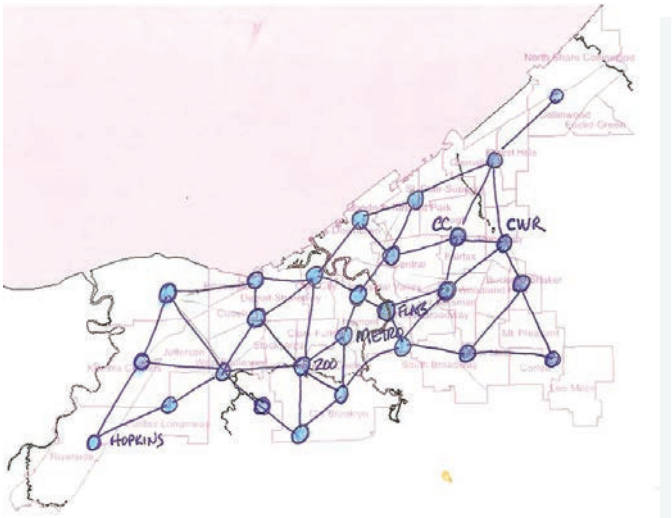
Suncheon Bay is a welcome addition to the growing set of modern PRT.

Vision of the ATN complex interfacings wigth the mail railway station for Uppsala, Sweden, site of Vectus's test track.

PODCAR PROMOTIONAL TOUR

What do Podcars mean in Peoria?

What should local officials, students, and concerned citizens know about ATN – Automated Transit Network, or more. Generally advanced transit? What are today's issues? ATRA secretary Kjensmo Walker is available to speak at a series of events of this nature.



ATN networks create new urban connectivity, but few in Cleveland have thought in a hypothetical way.

She is particularly interested in transportation and planning officials and students and academics. She will have a set of powerpoints to speak from, field questions, and point to sources of information.

Kjensmo is based in Minnesota and familiar with the US Heartland, but she is willing to travel – at no cost to you – to your city wherever it is – Canada, US coasts,

maybe beyond. She can be available for multiple engagements in your city – one with City Hall planners and engineers, for example, and another with the local chapter of the Sierra Club or the Environmental Defense Fund. A third might by at a local university speaking to students and professors. Kjensmo is a qualified urban mobility specialist.

These PCC7 promotional efforts are underwritten by INIST. They aim to draw attention to the next podcar city conference this coming October in DC. In cooperation with the USDOT, PCC7 will focus squarely on the emerging ATN industry, the logic of a national demonstration project, and the many places where ATNs can reduce carbon emissions.

PCC7 organizers expect to draw a large number of transport and economic development officials from the highly urbanized Eastern mega-region – from Atlanta up to Boston and from inland locations such as Pennsylvania, the Great Lakes and the South.

Can you organize such visits in your home town? Why not set up a Task Force, brainstorm about outreach, set a date and have fun? Call Kjensmo at (952) 215-5451, or shoot her an email at *kjensmotwalker@gmail.com*. Help bring Podcars to Peoria.

Dear ATRA member,

As conditions become ripe for US policy changes, ATRA wants to seize the opportunities that lie before us. We are asking all members (and friends) to reach out to open-minded individuals, groups and officials around them in order to interest them in more sustainable transport.

ATRA will prepare a package materials to help you in this important work. This will consist of handouts, summaries of the status of advanced transit and opportunities as both reports and powerpoints, youtube video files and information on the 7th podcar cities conference to be held October 23-25 in Washington DC and Arlington VA. The theme is ***Innovation in Public Transit****. It is being organized by the USDOT, INIST* and ATRA at George Mason University with reception at the Swedish Embassy.*

Our goal is to embolden you to move from our current, unsustainable auto-addiction to create better cities with advanced transit. We aim to excite mayors a MPOs, transit officials and civic leaders as well as private entrepreneurs. Your role in this is vitally important.

Please let know who in your area might be contacted for office visi ts, small technical meetings, or public events. If you have ideas on what material would be most helpful, please let me know.

Together we can make 2013 the year when advanced transit really starts to happen. I look forward to hearing you.'

Stan Young, ATRA President

** The California-based International Institute of Sustainable Transportation.*

2013 BRINGS FIVE NEW APMs

Five APM are opening soon. One is at Phoenix Airport – an evolving spine for sprawling, growing **PHX**. The $1.1 billion, 3.5km elevated project has a system supplied by Bombardier for $186m. The Innovia system, for now, includes 18 vehicles serving three stations – one at PHX's Terminal 4, the others at remote parking and a station of this city's LRT. This is just the first phase. Plans are for extension to a car rental center. In 2009 alongside the supply contract, a 10-year agreement for O&M services for $69 million was signed. It is the centerpiece of the APM13 conference taking place in nearby Mesa April 22-24. It will be the 55th airport installation. Visit *airfront.us* to see the updated Count.

The timing and surroundings of other Bombardier openings are more exotic. A system was delivered and ready for service in 2011 in the **Yong-In** district of the Seoul metropolitan area, South Korea. A dispute between the city and the main contractor erupted, and regular service never began. Bombardier is now recommissioning the $600-million system – 19 kilometers, all elevated, with fifteen stations. The figure likely includes several years of O&M. Details are not readily available.

One of the current crop of new APMs , supplied by Bombardier, is at Sky Harbor Airport in Phoenix, site of the next APM conference next month.

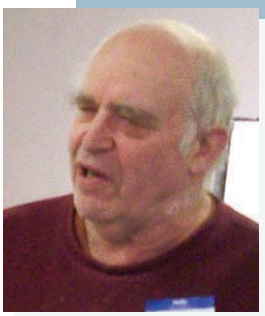
Another is in the capital of Saudi Arabia, the booming metropolis of **Riyadh**, where 6 lines of transit are currently being tendered. At a highway intersection near the airport, a dense wad of banking, technology and learning is planned as the King Abdullah Financial District. When Bombardier committed to supplying a one-way 3.6-kilometer loop with six stations, an opening date of 2012 was projected. We are now in 2013, and there is little hard news of this sun-drenched project.

A driverless metro opened last February in **Milan** – the first in northern Italy's financial center, but not the first in Italy. That title goes to Turin, where Matra-Siemens opened a VAL in time for the 2006 Olympic games. Rome C was to open its first section with Ansaldo driverless cars and ATSF controls in 2011, with completion of the 26-kilomter line foreseen in 2015. In Brescia construction of an 18km line was to start in 2003, but service has not yet begun.

Finally, in Asia, in South Korea, a subsidiary of the world's largest steel producer is to open a shuttle that has the potential for PRT services. It will quietly and gently carry visitors to the **Suncheon** nature preserve near the city of Incheon over a total of 5km of double track. Last month stations were equipped with elevators, screens, turnstiles, and displays. Testing was "well underway" using a specialized vehicle.

TECHNIX TIDBITS

Last January 13 at ATRA's annual *Technix* gathering, some twenty people exchanged news and views, this time with an even larger dose of Swedish inspiration. Many spoke of the coming of driverless, including Chair Alain Kornhauser who repeatedly thanked Google for making robocars either a precursor or a substitute for dear old, guideway heavy PRT. Increasingly heard at *Technix* and throughout the wider transportation research world of TRB is ATN – automated transit networks – as coined in San Jose and now sometimes heard in the halls of USDOT.



Tollroads editor Peter Samuel spoke of trends in private financing of urban infra-structure.

The 2013 session of *Technix* took place very neatly and comfortably in an incubator park owned by the University of Maryland, conveniently located a short walk from a Metro station providing easy (if not quick with all the station stops of conventional rail) non-auto access to Greater Washington. Later that evening was ATRA's Business Meeting at the more stately Washington Hilton.

Swedish Delight

ATRA VP Ingmar Andreasson, now devoting full time to his *LogistikCentrum* consulting practice, reported that plans and prospects for construction at Chalmers Institute of Technology (his alma mater) look good. Beamways is helping secure support funds from those who are concerned with new jobs to fine-tune its asynchronous controls. Chalmers is in Sweden's second largest city Gothenburg, which recently started charging drivers for use of central roadways? Gothenburg is also home to Volvo.

On the Swedish airfront, officials of Arlanda Airport (Stockholm on the fast-track way up to Uppsala) have begun a collaboration with local officials from the nearby town of Sigtuna. PRT schemes have been defined there in the past. New ones might benefit from global airport experts.

Robocars in the 'Hood

How does ATN relate to the emergence of cars capable of self-driving? If we lock them into an exclusive guideway, controlling and protecting them from accident-prone humans, wandering babies and squirrels, and windblown debris becomes easier. If vehicles exit the ATN, autonomous/automated operation is still easier within restricted areas – a college campus, a medical complex, Software developer Tyler Folsom sees the "Great Convergence". We are at the threshold of

Technix participants energized by shop talk last January at the Univer-sity of Maryland.

real government and Wall Street backed investment in dual mode – systems and consumables. Bob Johnson showed the latest advances in his scale mockups controlled by his evolving visually-based software.

Kornhauser hopes that New Jersey officials will adopt policies that welcome robocars, perhaps by calling the “crashless” vehicles freed from the shortcomings of humans. He focuses a lot on stations are social gathering and networking places – adding attractive pedestrian and bike districts to our landscape.

Tollroads Editor Peter Samuel threw a road-focused investor point-of-view into this year’s *Technix*.

Realities of Mass Transit

Wayne Cottrell gave an overview of automated transit that claimed the world’s first ATO implementation was in Barcelona in 1961. Fifty years later, the US is a laggard in transit technology.

UMd student Reuben Juster reported that WMATA plans for a circumferential Purple Line are estimated to cost about $2.2 billion for LRT or BRT of some standard brand of corridor transit. He delighted in envisioning what ATN network might be developed for a sum like that, and how much more profound its impact would be.

Christer Lindstrom was able to report that we have an opening to discuss ATN and its many potentialities to the realities of mass transit in the US. Historic Swedish-US cooperation is underway, and the last Podcar Cities conference in Berlin and Stockholm took place with USDOT presence. There was also an indirect link in the person of Rod Diridon of the Mineta Transportation Institute at San Jose University. This connection with be further strengthened next October 23-25 at George Mason University in Arlington VA. Mark your calendar!

CALLING ACADEMICS

At its Board meeting last January, ATRA decided to establish a new category of membership for colleges, universities, and related research institutes. The annual dues will be $500. First to join in this new program will be prestigious Princeton, strategically located between Philadelphia and New York City in the heart of the *Eastern Establishment*.

This follows last year’s establishment of the Academic Research Committee (ARC). One of the co-chairs is at Southern Illinois University, making it a candidate for second member. Perhaps Cornell, San Jose State, or UC-Santa Cruz may jump on Board.

Academics — both professors and students — are invited to ATN-informed thinking and analysis..

TRANS-ATLANTIC VISIONS

Malcolm Buchanan has stepped down from the chairmanship of the ATRA Industry Group, and David Holdcroft has taken up this position. Malcolm and his father Colin are legendary figures in British transport planning and policies. He has done much to advance the consideration and analysis of Automated Transit Networks (ATN) – in the UK and China. His insights will be missed.

Buchanan's departing thoughts recognize that ATRA needs to raise funds to better deliver the message of the promise of advanced transit. He thinks consultants and policy-makers around the world will benefit from ATRA expertise and advocacy. What better way than road shows? If funds were available road shows could be enhanced by display of at least one operational PRT vehicle.

Last January's Technix got down to the nitty gritty of Bob Johnson's pioneering work in visually guided robocars.

TRB HIGHLIGHTS

At the AP040 meeting at the Annual Meeting of the Transportation Research Board (TRB) last January in Washington, Dr. Rachel Liu reported that we received six papers this year- about the same as last year. There were two AP040-sponsored sessions: Viability of PRT and Showcase of Diversified APM Applications. The Committee will be undergoing a name change to *Automated Transit Systems*.

TRB is encouraging outreach to non-traditional constituent groups. Committees are encouraged to think of at least one non-traditional stakeholder for possible collaboration.

There was an engaged discussion of transit services provided by Google to its employees and challenges as the company's workforce grows.

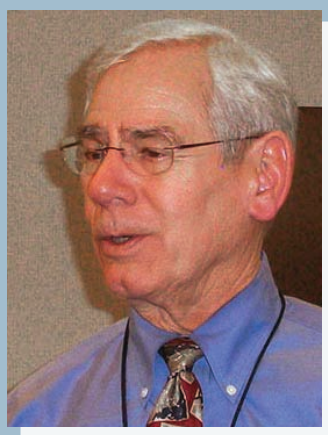
Stan Young suggested Stanford University as a possible location for the Committee's Mid-year Meeting and coordinate with the Stanford Conference scheduled for July 16-19.

NEW DIRECTION

Every year ATRA holds election of its officers and votes for a third of the Board of Directors, whose number is limited to twenty-five. This year several new members with a range of views and contacts were added. They are:

Rod Diridon, director of San Jose University's Mineta Transportation Institute and lead official for California's HSR program. He is a strong advocate for the inter-connectivity of ATN and HSR.

David Holdcroft, chair of the ATRA Industry Group and independent consultant who was a key player in the successful *Ultra* installation at London Heathrow Airport while he served as BAA's project manager.



California transit advocate Rod Diridon is one of ATRA's new directors.

Nathan Koren, a London-based infrastructure project consultant with Capita Symonds who has been principal analyst on several ATN applications in India and elsewhere.

Jeral Poskey, transport analyst for Silicon Valley giant Google, who served many years as an ATRA and well as previous terms on the Board of Directors.

ATRA's officers were re-elected:

Alain Kornhauser, Chairman
Stan Young, President
Ingmar Andreasson, Vice President
Kjensmo Walker, Secretary
Tony Newkirk, Treasurer

ATRA also created a new category of membership for universities and other academic/research groups. Academic members will be prominently featured in organization literature and have access ATRA archives and expertise. For more information, contact *alaink@princeton.edu*.

ATRA also presented certificates of appreciation for Board members completing three-year terms. These include: Will Ackel, Mike Conwell, Wayne Cottrell, Robert Dunning, David Maymudes, Steve Raney, Joerg Schweizer, and Stan Young ATRA would like to express again its gratitude for their devotion and contributions during their tenure.

FIVE AP040 CANDIDATE RESEARCH NEEDS STATEMENTS

ATRA works closely with the Transportation Research Board Committee that deals with APMs, including PRT. In TRB jargon, it is known as AP040 dealing with *Major Activity Center Circulation*. The current chair is Professor Rachel Liu of New Jersey Technical Institute. Work is underway on several Research Needs Statement that will feed into a larger process through which TRB will disperse 2014 funding to support research and user-friendly reports.

AP040 is drafting statements for submission by June 15. To help in these efforts or originate new ideas, contact *rliu@njit.edu*. Draft concepts include:

A: Mobility Enhancements for the Mobility Challenged
Current transit falls short in its service for segments of our society that are mobility challenged, meaning that they lack the ability to own and operate an automobile. These groups include the very young, very old, those with physical disabilities and license restrictions. Automated Transit Networks (ATN) hold promise to greatly enhance their mobility: claims have not been well researched creating a need is to examine these groups – their numbers, locations, special needs and document ATN's ability to contribute to our nation's mobility disadvantaged.

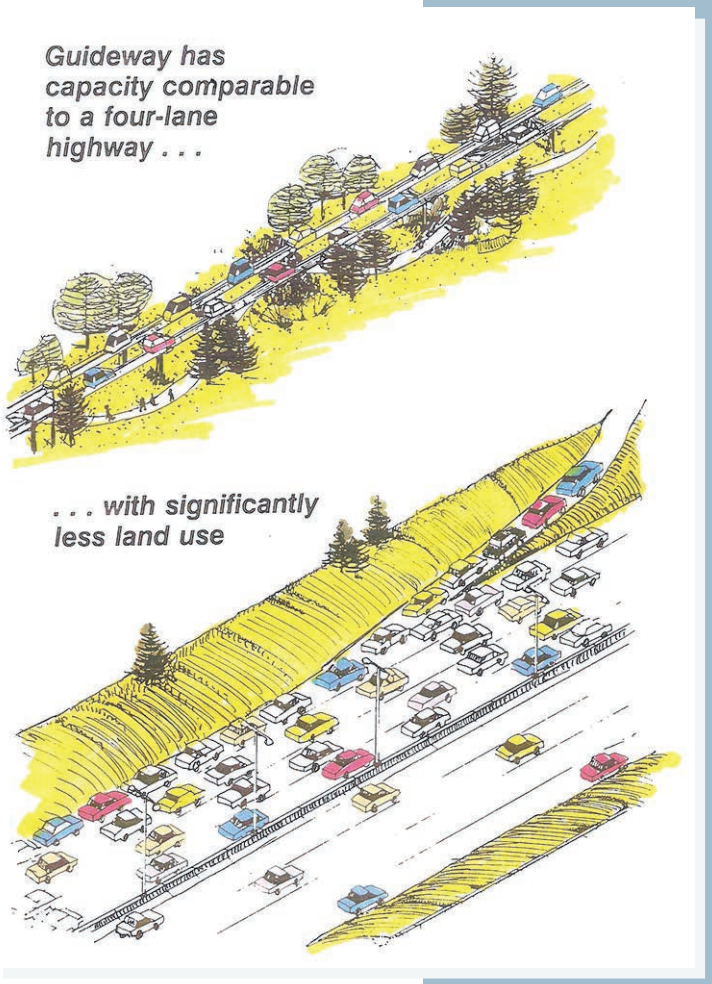
B: Land Use Benefits of Using Dedicated Right of Way
Land use, more than anything, determines quality of environment. Advanced transit promises more flexibility for land use decisions. ATNs can enable an array of options to support sustainable development. The science of land use and its spatial relationship to transportation options and there characteristics needs to be

adjusted to these new realities. With the availability of advanced transit options, there are little-explored ways to create a less auto-dependent environment. The research need is to survey the science of urban spatial relationships relative to mode and procedure a better methodology by which to evaluate transport infrastructure alternatives.

C: Synthesis of Modeling Practices for ATNs
Many urban areas have undergone ATN studies, with attempts to assess impacts. However, the assumptions, tools, and methodologies used vary widely. Planning guidance in terms of methodology and available tools is needed. This can take the form of a synthesis of practices for advanced transit modeling and simulation.

D: Safety and Reliability of Advanced Transit Systems
Automated systems provide many advantages in safety and reliability arising from removing driver error. However, removing the driver opens up many questions related to liability. Even though crash reduction is positive from a safety point of view, the consolidation of liability on the operator or manufacturer introduces liability models that resemble other modes such as airlines and heavy transit. Coping with such liability, and objectively discussing the question of 'How safe is safe enough?' is the focus of this need statement.

E: ATN Interfaces with Automated Vehicle (Robocars) Research
With the rapid emergence of automated/autonomous vehicles raises questions for ATN planners. Do they operate separately from an ATN or can they function jointly as dual-mode systems. Since battery-powered vehicles are limited in range and speed, the need for recharging arises. In a DM system, robocars can enter the network for longer trips at higher speeds and recharge en route.



How many lanes of highway is an ATN worth?

Other Ideas

1. Compare the safety performance of Automated transit and general transit. Given the immaculate safety records of APM/GRT systems, even though the number of operations is small, the case that automated transit is much safer is clear. How to project and compare them to operations that are 100 or millions of times bigger and still be able to make the statement?

2. It is possible to increase transit capacities – both heavy rail and bus by implementing driverless technologies. A synthesis or at least a paper would make more people thinking about such applications and their implications.

ATRA BENEFACTORS

Several ATRA members responded to President Stan Young's fund-raising challenge last fall, bringing in (as of mid-January) over $1300 in donations. Many thanks go to the following:

Transit can be a beautiful thing.

Will Ackel, of sunny California, who looks at mobility needs from the individual's point of view, especially of those with visual challenges. Will speaks a with calm, reassuring voice, but writes with a sweet, cogent pen.

Ingmar Andreasson lives in Gothenburg, Sweden, home of Volvo and his alma mater Chalmers Technical University. He has been ATRA's VP for many years and active in TRB and the ATRA Industry Group as well. He speaks frequently at international conferences.

Joe Lampe resides in Minnesota's Twin Cities and has long been part of the large PRT community there. Quietly with several colleagues, he has designs on a Minnesota version of advanced transit.

John (Dennis) Manning was ATRA president and chair for many years. His vision and leadership are enriched by a successful Caltran career in many parts of the Golden State. He has laid the groundwork for innovation in his native Fresno.

Thomas Richert also is a past ATRA leader, but he lives in winter-blessed New England. His tact and insight are appreciated by many along with his project management expertise.

AIRPORTS

Brazil: Sao Paulo's airport has no APMs. Air traffic was modest until recently: it was 13 million in 2004 but boomed to 32m last year. Two of the four terminals in the master plan exists. A third is underway with opening planned for March 2013 in time for world soccer games. T4 is to be built for low-cost airlines. There are also conceptual plans for a new airport 30-70km from the city.

In 2003 a $500-million rail link to Guarulhos Airport was announced. Officials are considering how best to interface the airport and the new rail station about 2km away.APM and LRT options are being studied. Meanwhile, Brazilian APM supplier Aeromovel is busy finishing a smaller airport-rail APM link in Porto Alegro. If it works well, the prospect of a second installation at Sao Paulo for Aeromovel looks bright. Or will an international tender be called?

London, England: The availability of PRT service from LHR's Terminal 5 to remote parking lots was reported to be 99.5% last January at ATRA's *Technix*. Few problems have been reported, and BAA recently unveiled $5-billion infrastructure upgrade program that includes demolition of several awkward old terminals and

creation of a new Terminal 2, new taxiways, refurbished baggage systems and an extension of the Ultra "pods" to connect terminals and business parks. This is a major step forward for the commercialization of PRT and especially a new wave of projects designed to reduce airfront GHGs.

New York, New York: Not all are happy with their experiences at JFK (48m/year), LGA (24m) and EWR (34m). Even when they function well, their aesthetics are uninspired. This may change if "embarrassed" millionaire Joseph Sitt gets his way. He has reportedly dedicated $1 million of his wealth to launch a drive to spiff up New York's airports. Visit *globalgatewayalliance.org* and sense the high ambitions. APM-less LGA may be privatized. EWR and JFK both have functioning systems. Both work but have rattles and hiccups. For example, 140 AirTrain passengers in three trains were stranded for several hours above an expressway near JFK last August. The problem was traced to a loose wire in the main computer

Orlando, Florida: This architectural gem of an airport was born with APM arms. A central terminal is surrounded by four satellite terminals. Arriving snowbirds are greeted by colorful landscaped palm trees and flowers. Glass stations gracefully deliver them right into the central terminal, Since the 1980s four pairs of Westinghouse (now Bombardier) shuttles have functioned without major problems. They are just shuttles, mindlessly (according to one professional commentator) moving back and forth. Still, the airport depends on them, and the experience is good.

In line with ORL's original modern Florida gateway vision, the current development program calls for another cluster of terminals with a regional and HSR rail hub between them, all linked by a new APM. Reduced air travel has delayed the need for terminal expansion. Current plans call for a new parking garage near the future rail site with a new APM link.

LEFT: Ultra PRT has chalked up two years of smooth operations at London's Heathrow Airport, whose directors recently announced a larger second installation.

BELOW: French visions of PRT at airports and in cities is still sleeping. Shown is the Aramis test vehicle of the 1980s.