

News of Advanced Transit

ATRA is an organization of members who are encouraged to invite friends, neighbors and colleagues to join ATRA and may share a copy of TransitPulse on a one-time basis.

July/August 2014

PCC MOMENTUM

The theme of the 8th International Podcar City conference is *Taking Podcars to the Next Level*. The ATRA portion of the Program is being organized by Professor Ingmar Andreasson, ATRA VP for Europe and liaison to the ATRA Industry Group.

Conference organizers hope that PCC8 will be more than a discussion of the many issues surrounding the emergence of ATN as a serious modal option for cities, metropolitan areas and public and private districts. It aims to issue statements to the growing world discussion of climate change and fossil fuel reliance. It is hoped that the gathering at Arlanda Airport September 3-5 will be the basis for joint formulation of a blueprint forward into the future. *Til sammans style!*

Conference Numbers

About a hundred experienced world experts, officials, agency people, consultants, real estate developers, architects and transport and airport planners, academics and others will gather for PCC8.

There were seven conferences, described below - PCC1, PCC2, PCC7. PCC8 will mark a turning point in many ways. Expectations are high the series will continue.

PCC-2014 will run for two and a half days, covering these timely topics include:

- Podcars at airports, including experience at London Heathrow's PRT and plans for Stockholm's Arlanda with input from ATRA VP Shannon McDonald
- How Podcars can add value in urban development as well as deliver environmental benefits
- Challenges to podcar implementations and funding

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Extensive study of ATN in the King's Curve district outside Stockholm has been done.

- The market for Podcars (ATN, PRT) in Europe, Asia and the USA and recommendations of the San Jose State/MTI assessment
- Procurement methods and business and financing models

Peter Muller will lead a session on airport planning. Lawrence Fabian will give overview of trends in the larger APM industry. The results of the Mineta Transportation Institute report on the ATN Industry will be presented. No doubt tidbits on the latest modern pod operation in Suncheon, Korea will be shared, as well as news of prospects at London Heathrow and Abu Dhabi's Masdar.

PCC Conferences in Perspective

The first Podcar City conference was in 2007 in Stockholm, Ithaca the following year. Last year PCC7 (or PCC-2013) was in Arlington VA with USDOT participation. Visit www.podcity.org for details on all of them. Recently the Vectus system in Suncheon, South Korea opened, and West Virginia University is investing substantial funds to upgrade and improve its 1970s PRT. WVU has selected Paris-based world rail control giant Thales. All these are further indications that the podcar market is maturing.



It is time to ponder larger podcar installations to meet the mobility needs of our cities and towns, especially our airport complexes. How will urban life be transformed in a podcar-enabled district? Ultimately what will a Podcar City look like? At PCC-2014 we will begin to explore these impacts in detail. The venue is, appropriately, Stockholm's Arlanda Airport. Airport officials, municipal officials and developers have rolled out a conceptual master plan to create Airport City Stockholm, eventually to add 30,000 jobs to the 20,000 that are there today. What competitive advantages will this give to international corporations, who have choices when basing facilities at airports.

Cities around the world are growing. A remarkable new trend is that cars are no longer seen as all desirable in dense areas. Many big cities, such as Paris, Hamburg, London, New York and Stockholm have adopted car restrictions, e.g. congestion tax, subsidized bike-sharing, bikeways, and walkable streets and trails. These are typically done in districts with high standards of public transit. USA driving has reached peak, and other western countries seem to be following. So PCC-2014 will look beyond Arlanda and explore how podcars can be designed as alternatives to auto addiction.

Registration

The full price for registration is \$900. \$720 is the Early Bird rate, which expires August 15. ATRA members get a 33% discount down to \$600. Go to www.podcity.org. Those who have questions should contact lfabian21@gmail.com.

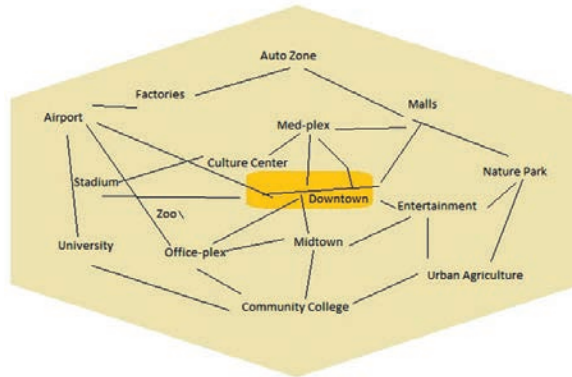
Exhibitors can still book a large space with 3 registrations for \$3200 (\$2560 early) or a small one with 2 registrations for \$2200 (\$1760 early). Contact Christer Lindstom at christer@encitra.com.

Intense discussions were part of the scene at PCC7.

ATN AS A COMPLEMENT TO BRT

ATRA member Reuben Juster presented an ATN system developed by fellow member and Montgomery County resident Bob Johnson at the *Makeover Montgomery 2014* conference last May 8-10. Over three hundred planners, residents, and students explored ways to create livable and sustainable communities through policy and design.

Reuben received help from President Stan Young and Bob to develop the presentation entitled “Increasing the Potential of Bus Rapid Transit and Light Rail Transit Corridors with Automated Transit Networks”. It aimed to brand ATN as the “best friend” of traditional transit, instead of a competitor or alternative. The audience was receptive to the idea, with many audience questions and comments at the end of the presentation. Two questions stood out. First, what are the operating costs and, second, how much is usually charged for a trip? Limited operating experience means there is no sound basis for estimating O&M costs. Heathrow’s PRT system, for example, charges no fares (passengers pay via parking fees).



The ATRA participants also had an opportunity to speak directly with Marc Elrich, an at-large County Councilmember who has been very supportive of the planned countywide BRT. He was interested in the ATN concept as a complement to BRT in places where bus ridership is modest or inappropriate.

Reuben will have a chance to show the work again at a poster session during July’s *Automated Road Vehicle Symposium* in San Francisco.

SAN JOSE MTI ASSESSMENT & BEYOND

A team of researchers based at San Jose State University’s Mineta Transportation Institute has taken a hard look at the emerging ATN industry and found it to be a “proto-industry” with one or two dozen start-ups. Several of them are credible suppliers to deliver a modestly-sized ATN in two years, assuming that it is executed within a R&D context that allows in-situ validation and thoughtful public relations.

Today’s ATN suppliers, promoters and would-be suppliers (such as Bombardier) have not yet gelled into a true “industry” with multiple financially sustained suppliers and willing buyers, associations and events. Conditions are changing rapidly, and the next two years will be critical for advancing awareness of solar-powered truly sustainable ATNs.



How real is the industrial basis of viable ATN projects?

The MTI report is not an assessment of ATN *technology*. It does not evaluate proprietary designs, nor formulate pre-emptive choices about vehicle-guideway interface -- notably suspended versus mounted vehicles and choices for vehicle size and propulsion. The report does delve into guideway and station design parameters and has many new and useful graphics. Moreover, it aims to be a useful planning resource for practitioners and looks at possible business models for ATN implementations.

Furman and the study team suggest that anticipated societal benefits from ATN implementations justify financial risks. They see possible investment from the public or private sector. ATN technology risk is manageable for modest projects. With diligent engineering and management, project planners, developers and public officials can confidently undertake ATN projects of up to ten stations – possibly up to 15 stations. The report recommends that USDOT solicit project concepts of this scale from MPOs. Such proposals could embrace a possible second phase taking them to 20-25 station networks.

ATRA'S ROLE IS CLEAR

With the information in the MTI report, many more architects, urban designers and zoning officials will be excited by the new possibilities that ATN can make for community life that is more sustainable and healthful. ATNs can be planned to

- solve last-mile linkage problems
- mitigate traffic impacts of new development
- reconfigure parking supply
- better connect trip-generators to existing transit hubs
- integrate large college and medical campuses
- serve auto-restrained or auto-free zones, such as for seniors
- substitute for school buses and reduce teacher parking needs
- create more sustainable airport commercial districts.
- integrate with photo-voltaic panels to power the system

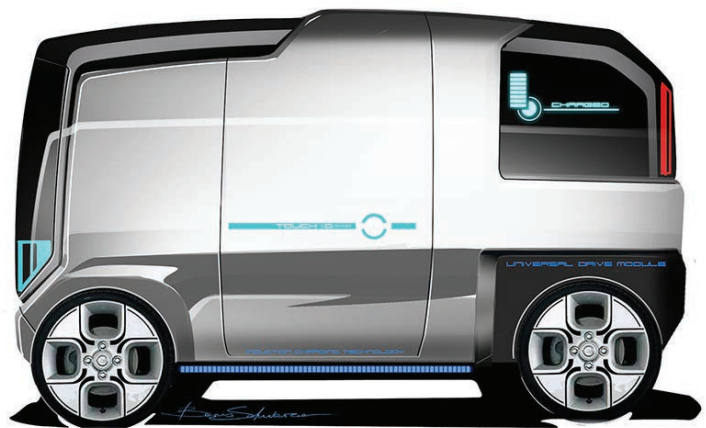
The devil is in the detail. There is much work to be done. Expect much at ATRA's Workshop Friday, July 18 in San Francisco and at PCC8 in Stockholm, Sept 3-5. And think forward to Technix 2015 next January.

Rubix One of the Bombardier dynasty is gathering ideas for an urbo-car, which would fit into dual-mode ATN.

PODS WITH AND WITHOUT GUIDEWAYS

Three 100-vehicle automated fleets projects were announced recently. They aim at a new kind of district mobility service similar to what low-speed PRT circulators promise, but without exclusive guideways that are necessary for classic PRT.

Driverless cars on streets are being deployed in Milton Keynes, UK – a post-WW2 new town north of London. A second is in conjunction with a major research facility at the University of Michigan in Ann Arbor, and a third is at the University of West Florida (Pensacola).



RUBIX
CharlesBombardier.com

Europe's CityMobil2 program is deploying smaller fleets in seven cities and towns, and Singapore's Technical University is working with MIT on similar R&D. It is hardly necessary to mention Google's extensive road testing and manufacturing program in Michigan.

Robocars are increasingly in our lives, many spun off from military drone and rescue device development. Driverless cars will not be on the Interstates soon, but they are appearing on managed campuses and building complexes.

Shedding 70% of Project Cost

Guideways typically make up 60-70% of rail transit, APMs and classic PRT. "It's as if the exciting promise of PRT is being overwhelmed by an even more promising future derived from autonomous fleets," observes David Nelson of Jacobs Engineers, currently serving as a visiting professor in Paris. France has done well with driverless metros and dabbled with robocars at the auto-oriented INRIA, which incubated *Robosoft* and managed a short demo on a quiet street in the small coastal town of La Rochelle.

If PRT projects shed their costly guideway, the economics become more attractive. Many officials and citizens also perceive guideways to be visually intrusive and offensive, killing the notion of even considering PRT. Guideway-less PRT dissolves that issue as well.

OBERSTAR: A MINNESOTA LIGHT GOES OUT

Adapted from a statement of Jeff Brown, CPRT

The Honorable James Oberstar, one of America's foremost transportation policy-makers, passed May 3 at the age of 79. Members of Citizens for Personal Rapid Transit and ATRA will remember Oberstar as a friend, mentor, and kindred spirit. Few legislators have been so knowledgeable about transportation or so enthusiastic about its future. He developed an encyclopedic knowledge of the field in his 36 years on the House Transportation and Infrastructure Committee. He spoke often and passionately about the critical role that transportation plays in our quality of life and in the nation's competitive position in the world.

In recent years he had become increasingly interested in new forms of transportation. In a 2009 interview on PBS Now, he said "If we don't change the future of transportation, we expect more congestion, more detrimental air quality effects, more hours spent in traffic, more cost in moving people and goods in our society, and we will continue to add to greenhouse gasses and to accelerating global climate change." His words were a caution but not a prediction. He spent his public service career promoting improved safety and efficiency in every mode of transportation and was optimistic about the future.

Last October, Congressman Oberstar served as keynote speaker at the PCC-2013 in Arlington VA. Many members vividly recall his eloquence and passion speaking about the importance of ATN and its potential to transform America and the world for the better. He even volunteered to foster local ATN projects.

Representative Oberstar will be greatly missed.

WORKSHOP INVITATION!

Envisioning Automated Vehicles within the Built Environment: 2020, 2035, 2050

Geared to Staff from Metropolitan Planning Organizations, County Transportation Agencies, and other Regional Planners.

RSVP by July 11th. Attendance is **free**. Limit 50 attendees.

<http://tinyurl.com/TRBUrbanImpactsofAutomated>

Friday July 18th, 2014

Hyatt Regency SF Airport

Part of the Automated Vehicles Symposium 2014 hosted by AUVSI and TRB
www.automatedvehiclessymposium.org

Sponsored by:



COMMON GOOD

Government is created to pursue the common good. So, public officials should be thinking of ways for "we the people" to live in harmony and promote a sustainable general welfare. A few such as Fred Payne of Greenville SC, Rob Means of Milpitas CA, and Hans Lindqvist of Stockholm County are already working for advanced transit options.

ATRA knows that we need government to advance transit in ways that transcend Red-Blue lines. Conservatives tend to look at society as a collection of individuals. Liberals see collective players.

Our transportation infrastructure, so heavily weighted to auto addiction, is sadly unsustainable – both in terms of carbon emissions and resource usage. Do we need an unending stream of new cars, vans and trucks? Road costs keep getting higher. We hardly have funds to maintain the existing 50,000 miles of Interstates and 2.6 million miles of paved roads -- a total of 8.6 million lane-miles. And don't forget the tens of thousands of acres of parking lots and garages.

According to Pierre Laconte, former head of UITP and now chair of a Europa Nostra heritage committee, we are losing the battle to climate changes skeptic who are well funded by the energy sector. He points to a 2007 report by the Union of Concerned Scientists documenting oil industry use of the same tactics that the tobacco industry used to fight cancer warnings from cigarettes.

A Pod-Way Out of Our Dilemma

Few doubt that car costs will continue to rise. ATRA recommends preemptive policy shifts to get us out of our auto addiction. New ped-bike infrastructure will make mass transit more viable. ATN can further this with community-scaled mobility

services that feed existing transit stations. With robo-cabs and robo-vans, much can be done without costly guideways.

Sadly, ATN is not being designed into huge road projects. Witness New York's \$4-billion replacement of the cross-Hudson Tappan Zee Bridge north of NYC. ATN is light and would not impact the bridge's structural requirements the way rail would. It was dropped for that very reason.

We have a huge task ahead of us. Fast change is hard, but slow change is easier. Witness the decline of cigarette smoking in US life. It has happened in land use too. Harvard's Professor Emeritus Charles Harris points out that in 1850, eighty percent of the land in southern New England was directly used by humans: only 20% was forest. As the USA expanded westward, agriculture and industry dwindled in Massachusetts, Connecticut and Rhode Island so that 80% of the land is today in forest!



Tamed traffic and pedestrian quality are desirable. ATN helps untangle last-mile congestion.

Reaching for the Numbers to Sustainability

Today over 90 percent of urban travel is by motorized vehicles. Transit's share is generally given as 2-3 percent in the USA. Walking and biking are harder to measure, and it appears they are growing. Let's generously say that green modes make up 10%. ATRA wants to push that to 25% and then 50%.

NEW WARREN BOOK

ATRA member and noted New York architect Roxanne Warren has produced another insightful book, *Rail and the City: Shrinking Our Carbon Footprint While Reimagining Urban Space*. It will be released by MIT Press in October. Her early book was entitled *The Urban Oasis*.

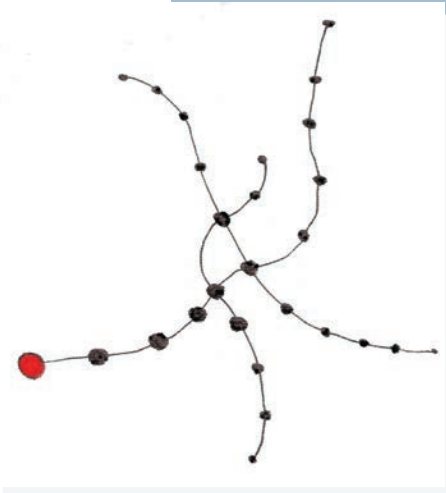
She and George Haiklas continue to work for the transformation of Manhattan's 42nd Street into a transit and pedestrian mall. "The politics is not easy," reports Roxanne a good decade into their project dubbed *Vision42*.

ATRA @ FACEBOOK FORUMS

Check out [facebook.com/advancedtransit](https://www.facebook.com/advancedtransit). Add a comment. Like it. For those who are into Facebook, this will be a big thing.

Also join discussion forums on www.advancedtransit.org/forums.

For more information, contact kjensmotwalker@gmail.com.



How good can rail transit coverage be, and how many ATNs could feed into the red station?

NEW KID ON THE ATN BLOCK

Swift Tram's ATN design with suspended vehicles and PRT functionality is in early stages of development. It was founded by Carl Lawrence, an MBA and electrical engineer with 20+ years in electric transportation. The company is based in Boulder CO.

Their website defines Swift Tram as an APM and mentions 8-passenger and 32-passenger vehicles. Beyond that, details of the type of propulsion and controls are few and far between. VP John Anderson is embarking on control development and foresees PRT functionality. He hints that drive bogies will be located inside the fixed guideway and speaks of distributed intelligence. How is Swift Tram different from Jpods, Skytran, Cybertran, Beamways and GTS?



Rendering of the larger Swift Tram suspended vehicle.

Lawrence's background includes designing the hybrid electric buses still used on Denver's 16th Street Mall. His current Swift Tram team has experience in rail manufacturing strategies, fabrication, energy management, and business development. They hope to install a demo soon, envisioning eventual expansion into a network on a large campus connecting to a light rail station.

According to VP Elaine Thorndike, Swift is developing strategic partnerships with large companies, universities, and suppliers to weather the long sales cycles of transit projects. One of the more exciting markets will be communities surrounding future high speed rail lines. More information can be obtained from becky@SwiftTram.com.

PRT BUMPER PROMOTION

SE Virginia resident and ATRA member Bill Newton has new plates on his road vehicle that proclaim:

ME4PRT

This may not surprise those who have gotten to know Bill at the January Technix meetings. He is shy to speak out before even small groups of friends, but he keeps a steady stream of news of PRT opportunities coming to ATRA leaders and impresses with the first-hand knowledge he has accumulated about bike share and the new batch of intercity bus services by Bolt, Megabus and others.

One of the beauties of ATRA membership and activities is that it takes in all kinds of people with different interests and perspectives. There are professionals concerned with standards and planning guidance. There are engineers preoccupied with technical optimization and efficiency. There are progressive citizens and ardent environmentalists. And those who contribute by license plates that get across the idea of advanced transit to Americans wasting time in traffic.

UPCOMING EVENTS

Bolded means ATRA is part of the program

Date	Name	Venue
July 8-11	Intersolar	San Francisco
July 15-17	TRB/AUVSI Autom. Vehicle 2014	SFO
July 18	ATRA Workshop	SFO
July 21-23	TRB Tools of the Trade	Burlington, VT
August 2-6	ACT	San Francisco
September 3-5	PCC-2014 @ Arlanda	Stockholm
September 7-11	ITSA Annual	Detroit
September 23-26	Isocarp Cities/Water	Gdynia, Poland
October 21-23	ULI Fall	NYX

2015

January 10 or 11	Technix
January 11-15	TRB Annual Meeting

APM FRIENDLY TAMPA AIRPORT MOVES FORWARD

When Tampa International Airport opened in 1971, a whole new way of configuring airport terminals took off. TPA was designed to pamper passengers -- often elderly who walk with difficulty and fun-seeking tourists who have many choices. The terminal complex is designed so parking-to-gate walking distance is less 700 feet. This is accomplished by pairs of APM shuttles radiating out from the landside Main Terminal to up to six airside concourses. A decade or so later, a driverless monorail was built into a level of a large parking garage to adhere to the 700' rule.

Car rentals take up several levels of that garage. In order to decongest the Main Terminal area, airport officials will move the rental activities to a location near the roadway entrance to the airport. This is known in airport circles as a Consolidated Rental Car Facility (ConRAC). A third APM will make it work -- much like has happened successfully at much busier airports in Atlanta and Miami.

TPA's APM-aided terminal configuration has worked well, usually adding to the flow of accolades from frequent flyers. Over the years, airside concourses have been added, modified and demolished, adapting to traffic levels and airline preferences.

All the original APM vehicles have been replaced, and controls have been upgraded. The monorail is to be rehabbed or replaced in 2018.

TPA air traffic rose from 10 million in 1973 to 14m in 1979 and then 126 million in 1996, peaking at 19 million in 2007. It has hovered low due to the Great Recession of 2008. Last year it was 17 million.

NO PODS ON TAMPA'S HORIZON

There is no immediate need to increase capacity, so TPA is investing in other improvements. One program will enlargement and improve the main terminal with Sweden's Skanska as DB contractor. The plan includes relocating the Bombardier-supplied and -maintained shuttles one to two stations outside the building to provide more interior space. The other is the new 2.1km, 3-station APM and ConRAC complex targeted for a 2017 opening. An intermediary station will serve existing economy (remote) parking. The third station complex will serve the ConRAC, with future plans for a new employee garage, airport offices, a hotel, retail and maybe planned metro and high-speed rail.



Satisfied with the driverless APM shuttles and monorail, both supplied and maintained by Bombardier, airport officials saw little reason to ponder PRT options for what has been designed as a high-volume link. Procurement is now active, with bids due September 5.

Maybe PODs Off-Airport

Beyond the airport land, however, is the modestly dense Westshore district of offices, hotels, retail and other facilities at the western edge of the city of Tampa across the bay from Clearwater and St. Petersburg. It is a prosperous commercial area with excellent long-term growth potential.

Airport officials have specified that the ConRAC complex be designed as an intermodal hub with the possibility to plug in, so to speak, other links, and here ATN may come into play. A visionary outlook is still alive and well at TPA.