



www.ngec.org

Our Vision: The NGEC provides national leadership in standardization, acquisition, and management of passenger rail equipment.

SECTION 305 NGEC 2023 Annual Meeting

MINUTES

FEBRUARY 3, 2023

8:30AM EASTERN

HYBRID

FACILITATOR	<i>Ray Hessinger, Chair S305 NGEC Executive Board</i>
ATTENDEES	<p>Board Members: Ray Hessinger, George Hull, John Oimoen, Jeff Gordon, Amanda Martin, Tim Ziethen, Troy Hughes, Jason Orthner, Jason Biggs, Richard Kedzior, Mike Jenkins, Brian Beeler II, Ryan Sharpe for Kyle Gradinger Support Staff and Colleagues: Steve Hewitt, Mike Murray, Dave "Mr. PowerPoint" Warner, Tammy Krause, Larry Salci, Patrick Centolanzi, Joe Paul, Jon Dees, Strat Cavros, Shayne Gill, Rebecca Anger, Jenifer Bastian, Gurleen Boparai, Marci Petterson, Eric Anderson, Melissa Shurland, Arun Rao, Blair Slaughter, James Glaspie, Tara Soesbee, Ed Engle, John Stolz, Frank Maldari, Benjamin Goldman, Kyle Otte, Adam Otsuka, Kirk Fredrickson, Kyle Gradinger, Dean Del Peschio, Andrea Farmer</p> <p>Guest Presenters: Amit Bose, FRA Administrator, Ran Barton, Amtrak, Martin Ritter, Stadler Rail, Gary Fairbanks, FRA, Hamid Sharif, Univ. of Nebraska, Kristine Severson, Volpe, Dan Ruppert, Devon Parsons, Amtrak, Amtrak, Lew Hoens, Metro-North, John Batey, STV, Inc., Erika Santana, VIA Rail, Jean-Phillipe Quintal, VIA Rail Industry Members: (See pre-meeting registration list) Total Attendance: approximately 115+ including virtual and in-person attendees with around 50 members of the industry.</p>
ABSENTEES	

DECISIONS MADE

1.

Welcome – Ray Hessinger, NYSDOT, Chair, NGEC Executive Board:

After a hotel safety briefing NGEC Chairman Ray Hessinger, NYSDOT, convened the 13th NGEC Annual Meeting and welcomed those attending in-person as well as those attending virtually.

2.

Self-Introductions:

Ray Hessinger called on those in the room and on line to briefly introduce themselves and the entity they represent. Throughout the day there were between 65 and 70 in-person attendees and about 50 attending virtually.

Roll Call – Steve Hewitt, NGEC Program Manager:

Following the self -introductions, Steve Hewitt formally called the roll of voting members of the NGEC in-person and on-line and confirmed the presence of a quorum.

3.

Review Meeting Agenda – Ray Hessinger:

Ray Hessinger reviewed the agenda, noting that it was a very packed agenda with many guest presentations as well as detailed procurement updates and other NGEC "normal" business updates.

Review the Meeting Packets – Steve Hewitt:

Steve Hewitt reviewed the meeting packets, noting that those on line received the same items electronically.

Steve highlighted the newly released NGEN 2023 background/educational document and thanked Missouri DOT for its graphic arts design of the "flyer" and for printing the hard copies for the NGEN.

4. Approval of the Minutes from the 1-24-23 NGEN Executive Board Meeting– Ray Hessinger:

On a motion by John Oimoen, IDOT, and a second by Jason Biggs, WSDOT, the minutes from the 1-24-23 Executive Board Meeting were approved as presented.

5. Chairman's Report – Ray Hessinger:

Good morning, and welcome to the 2023 Annual Meeting of the Next Generation Equipment Committee. This is our second hybrid meeting. Last year's hybrid meeting was very successful and resulted in one of the highest levels of attendance for an Annual Meeting in the 12 plus year history of the NGEN. Building on that success, we are hybrid again today, with roughly two thirds of our attendees here in person and the remainder spread out around the country and world, participating remotely.

I want to acknowledge my fellow board members from the States, Amtrak and the Federal Railroad Administration as well as invited guest presenters from Amtrak, the FRA, VIA Rail Canada and Metro-North. I also want to welcome our industry members who have joined us today, with a broad representation of manufacturers, suppliers, and consultants.

Finally, I want to acknowledge Steve Hewitt and Dave Warner. The NGEN would not be the organization it is today without Steve's ongoing effort and dedication. Dave is handling the technology making this hybrid meeting possible. Thank you both for another year of your service to the organization.

The initial meeting of the Next Generation Equipment Committee was held in April 2010. After more than 12 years, the NGEN continues to see active participation in its Executive Board, its subcommittees and work groups by States, Amtrak, FRA, and industry members.

This continued participation is strong evidence that NGEN members continue to see value in an organization that brings together the designers, suppliers, manufacturers, purchasers, and operators of passenger rail equipment to collaborate in the development of specifications that are made available at no cost to any organization who wishes to acquire new equipment.

Furthermore, the majority of the effort put forward is done on a voluntary, uncompensated basis. That means our respective employers – both public and private – also recognize that value.

Looking back, I believe 2022 was a productive year for the NGEN.

With respect to the routine business of the committee we:

Completed our annual review of the by-laws, with edits adopted in December to allow the NGEN to expand its public outreach efforts.

We completed an update and refresh of the NGEN one-page educational document for 2023, and this document is included in your meeting packet today.

We updated and refreshed our web site, now under our own NGEN.org address, to enhance our public exposure and make our documents more accessible.

Progress was also made on our portfolio of specifications and guidance documents:

A revised Bi-Level specification was reported out of the Technical Subcommittee, and an Executive Board Review Panel has been convened. It is anticipated that this revision to the Specification will be taken up for approval at the next meeting of the Executive Board (2-21-23).

Several working groups within the Technical Subcommittee made progress during the year. Specifically:

High-Speed Wireless Study – 1st phase of the study was completed in August, and work on 2nd phase was initiated in September. We will hear more about this later in today's agenda. We thank the University of Nebraska (Hamid Sharif-Kashani) for heading up the study with the assistance of the FRA.

Working Group on Vehicle Weight Issues – significant progress was made during 2022 and we are looking for this group to wrap up its work in 2023.

As George Hull, our Vice Chair, will describe later this morning we established a Communications on Rail Cars working group this year under the leadership of Ken Martin from Sharma & Associates.

While the NGEC does not procure or own any rail equipment itself, we keep up to date on and receive regular reports procurements that utilize our specifications. We will hear reports on a number of those procurements later in today's program.

Finally, with funding for this organization scheduled to expire at the end of September, the NGEC worked with Amtrak to apply for funding through the FRA's Consolidated Rail Infrastructure and Safety Improvements program (CRISI). If awarded, this funding will allow the organization to continue its work into the future. The NGEC greatly appreciates the letters of support submitted by our individual State members, AASHTO, the State's for Passenger Rail Coalition, and the Rail Passenger Association as well as many of our industry members. The Amtrak support for this grant application was significant and rose to the top of the company. The letters of support were enthusiastic and impressive according to the Amtrak's grants office.

We have a very full agenda for today's meeting:

We will hear an update from Amtrak's Government Affairs, presented by Ran Barton

The FRA will provide two updates for us:

Gary Fairbanks will update us on the Passenger Safety Working Group, and Mike Murray will discuss federal funding opportunities.

We will receive an accessibility update from Melissa Shurland of FRA and Kristine Severson of the Volpe Center.

We'll then jump into some NGEC business with a financial report from our treasurer, Tim Zethan of Amtrak and updates from the Technical Subcommittee by George Hull and a Document Control report from Tammy Krouse.

It's then back to the presentations:

Ryan Sharpe of Caltrans and Martin Ritter, Stadler Rail, will discuss California's hydrogen fuel cell efforts, and

Hamid Sharif-Kashani of the University of Nebraska will discuss the High-Speed Wireless study which is also supported by FRA.

We'll then review ongoing procurements, with presentations from Caltrans, Amtrak, Metro-North and VIA Rail, to be followed by a review of vehicle performance of both the Charger locomotives and Venture cars from Illinois DOT, Caltrans, Wisconsin DOT, and Amtrak.

Last, I'll provide a look ahead to 2023 and open the floor for comments and questions.

While not listed on today's agenda, we are expecting a visit from FRA Administrator Amit Bose at some point during today's meeting. We greatly appreciate the Administrator's support of the NGEC, and we'll provide him an opportunity for remarks whenever he arrives.

I'll now kick-off the presentations with an overview of our web-site refresh.

6. Website Refresh – Ray Hessinger:

Ray Hessinger provided a presentation showcasing the new NGEC website now located in its own domain at www.ngec.org and compared it to the original NGEC website which was a part of the AASHTO Rail website and was difficult to locate.

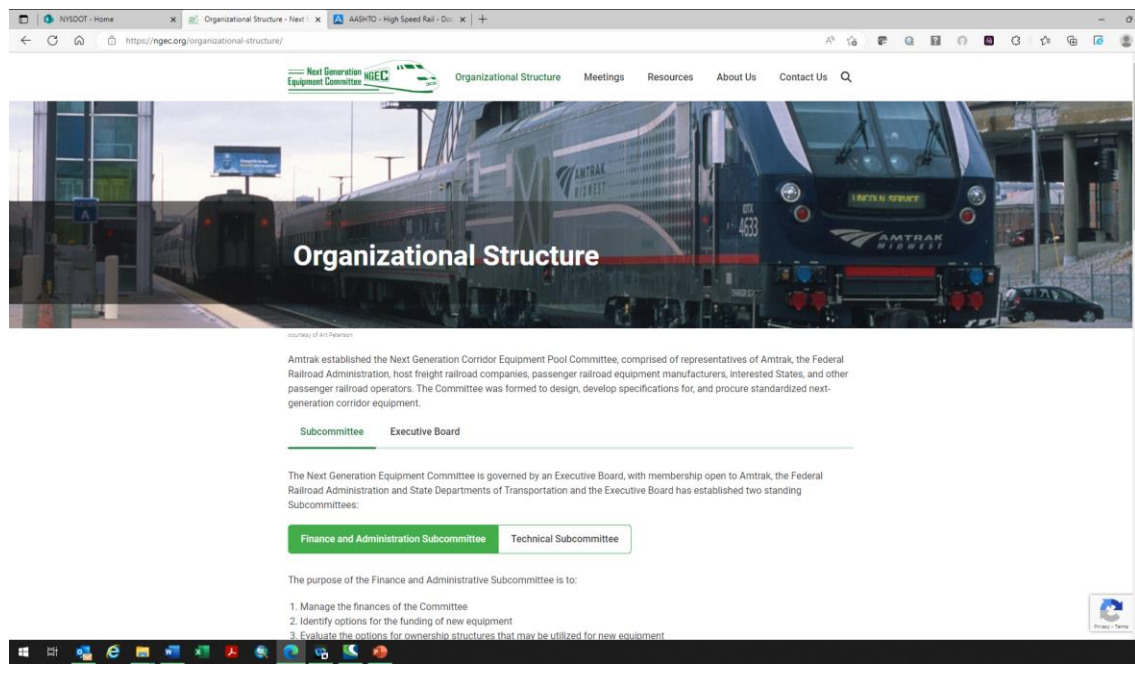
- Buried deep in AASHTO's website.
- Difficult web address
 - www.highspeed-rail.org/Pages/Section305Committee.aspx
- Poor Site Organization
- Documents in Word format
- Mixed in with other rail initiatives.

Where is It?

- Items on Main Page:
- Organization Overview
- Membership
- Monthly Activity Reports
- Annual Meeting Presentations
- Random documents
- Select "PRIIA Section 305 Next Generation Equipment Committee" box on side for more options.
- Duplication of items on main page
- Further nesting of Exec Board and Subcommittee info

Website Update:

- New Web Site
- Unique web address – www.ngec.org
- Improved organization
- All Documents in pdf format
- More current look & feel and more user friendly.



Browser tabs: NYSDOT - Home | Meetings - Next Generation Equ... | AASHTO - High Speed Rail - Do... | +

Address bar: https://ngec.org/meetings/

Next Generation Equipment Committee (NGEC) | Organizational Structure | Meetings | Resources | About Us | Contact Us

Meetings

Welcome to NGEC Meetings

The Annual Meeting of the NGEC is held in Washington, DC in early February and is open to the public. Meetings of the Executive Board are held bi-weekly via conference call and are open to Executive Board members, and support staff.

- Meetings of the Technical Subcommittee are held bi-weekly, via conference call and are open to Subcommittee members, including industry participants and support staff.
- Meetings of the Finance & Administration Subcommittee are held every 4 weeks via conference call and are open to Subcommittee members and support staff.
- Work groups, review panels and task forces meet on an as needed basis.

Latest Meeting

2022 Annual Meeting, Washington DC

[View Now](#)

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Next Generation Equipment Committee (NGEC) | Organizational Structure | Meetings | Resources | About Us | Contact Us

Resources

Technical specifications, activities and recommended practices document and more are developed by the Next Generation Equipment Committee (NGEC) provide up-to-date information on the activities of the committee as well as its work products, By-Laws all related to the working domains of the NGEC.

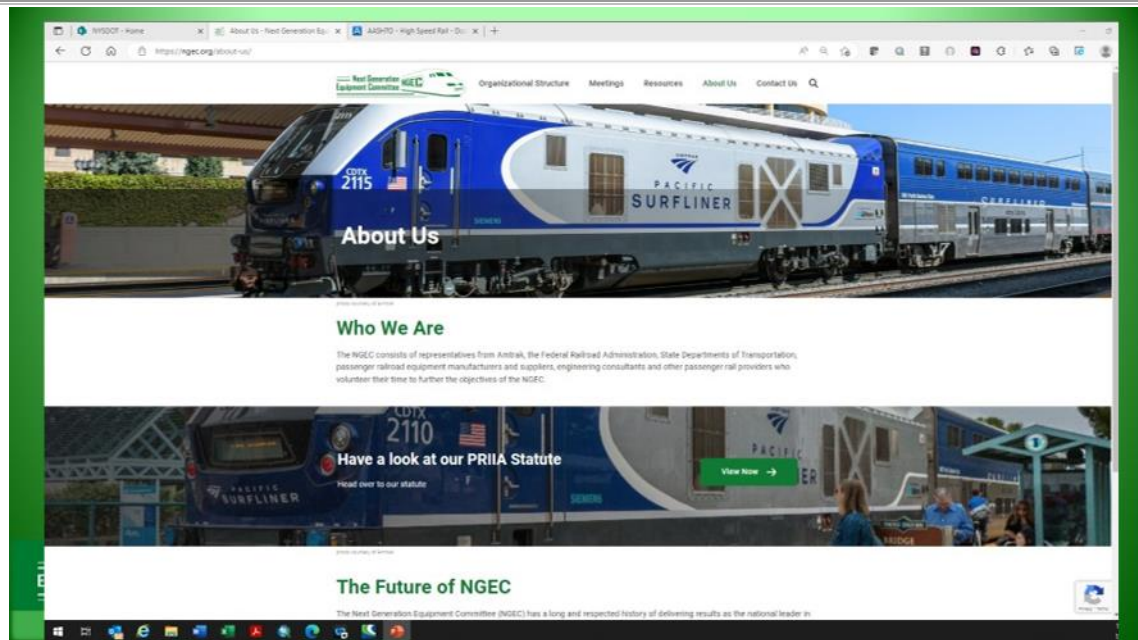
- Requirements Documents
- Vehicle Specifications *
- Reference Drawings *
- Reference Specifications *
- Recommended Practices
- Document Management Procedures
- NGEC two page Educational Document
- NGEC Activity Reports (monthly and comprehensive)
- NGEC By-Laws and Operating procedure

* Available by request only. The Chairman of the NGEC reserves the right to reject a request.

[Reports](#) | [Specifications](#) | [Repository](#) | [Standardization](#)

Comprehensive Background & Monthly Activities Report (updated October 31, 2022)
 PRIIA 303 Next-Generation Equipment Committee: Equipment Acquisition and Ownership PRIIA Recommended Practices 305-200 TSSSA document

Monthly Activities Reports



- Special Thanks to:
 - AASHTO (Shayne, Strat, Rebecca, David)
 - iENGINEERING Corp.
 - Amtrak, IDOT & WSDOT
 - Steve Hewitt

After summarizing the changes and differences between the old site and the new site – Ray encouraged members to go to www.ngec.org and check out the site. It is better organized and more user-friendly and will provide members and others a great deal of information on what the NGECC is and what it has and will accomplish. It is all right there for all interested parties to see.

7. Update from Amtrak External Affairs – Ran Barton, Amtrak:

Ran Barton provided an overview of what has happened at Amtrak as they recover from the pandemic. They have been working hard to recover from the impacts of COVID. Great progress has been made. They have 22 million riders - 7 million are new riders. They have restored or expanded service on eleven corridors. They have hired 3700 new employees for a net of +2000. Staffing remains a huge challenge and a primary focus at Amtrak. The IJJA infrastructure authorization has provided historic levels of investment in Amtrak and passenger rail as a whole. There are investments in rolling stock, IT, stations, and Capitol back-log. \$22 Billion – of which the National network receives \$16 billion and the NEC - \$6 billion. The IJJA creates new service corridors with the Corridor ID and Development Program. A new round of CRISI grant applications is underway with award anticipated to begin in April 2023. Amtrak will continue to aggressively recruit in order to staff up in areas of need.

As the IIJA authorizes funding – Amtrak needs to request its funding through the appropriations process. In 2022 the authorization levels were \$2.7 billion – appropriations approved - \$2.3 billion.

In 2023 the appropriation was \$2.45 billion.

For FFY 24 Amtrak is looking for the full authorized amount in its annual appropriations request.

Ran noted that the change in House leadership is challenging, and Amtrak is doing a significant amount of work on the Hill – conducting many briefings.

On the Senate side Amtrak is following the approval process for the Amtrak Board nominees and the progress being made to get these appointments confirmed to fill out the Board.

Amtrak is promoting its Connect-us vision which looks to increase ridership and add new stops (160). The intent is to redefine train travel in the US. They are beginning to replace the diesel fleet with the new Airo trains for intercity passenger rail.

Amtrak is also working towards mitigating climate change by getting to net zero emissions by 2045.

Strategically the emphasis is on:

- Zero emissions
- Renewable Energy
- Reduction of upstream emissions.

Amtrak recognizes that the prices for a ticket are high and that there is an urgency to get to a point of being affordable. – It is a year’s long struggle – as there is limited supply for a high demand product. While not ideal, Amtrak is trying to be imaginative and to push the timeline.

Overall, the outlook is great for Amtrak and passenger rail in the US.

8. Updates from the Federal Rail Administration:

Update from the Passenger Safety Working Group – Gary Fairbanks:

Gary Fairbanks provided a brief update on the activities of the FRA Safety Working Group –noting that the group is just getting back together again and working on personal security and safety issues.

Efforts include looking at Hydrogen storage – the safety standards currently are prescriptive for fuel tanks.

They are looking at battery power and fire issues as related to what happens to hydrogen cylinders and batteries if there is a collision.

More information to come as the working group re-engages.

Update on Federal Funding Opportunities – Mike Murray, FRA:

Mike Murray gave an overview on funding in the IIJA:

[ADVANCE APPROPRIATIONS]

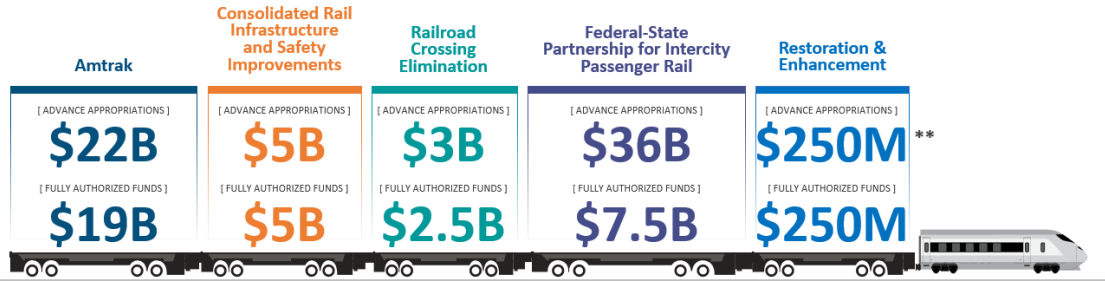
From FY22-FY26

\$66B in total
funding

[FULLY AUTHORIZED FUNDS]

From FY22-FY26

\$36B * in total
funding



* Authorized funds represent an up to amount that require annual appropriations to set funding levels for each fiscal year.

** \$34.5 billion for grant programs; additional \$1.5 billion is authorized for FRA operations and R&D – not included in this graphic. Grants for Restoration & Enhancement (advance appropriations portion) are funded through “takedowns” from Amtrak NN account; not included in totals to avoid double-counting.

CRISI Grant Program:

Eligible Applicants:

- A State (including the District of Columbia) or group of States.
- An Interstate Compact.
- Public agencies or publicly chartered authorities established by 1 or more States.
- Political subdivision of a State.
- Amtrak or another intercity passenger rail carrier.
- Class II or III railroads and associations that represent a Class II or III railroad.
- Any rail carrier or equipment manufacturer in partnership with at least one state entity, public agency, and/or local government.
- Federally recognized Indian Tribe.
- The Transportation Research Board (TRB) together with any entity with which it contracts in the development of rail-related research, including cooperative research programs.
- A university transportation center engaged in rail-related research.
- A non-profit labor organization representing a class or craft of employees of rail carriers or rail carrier contractors.

Eligible Project Criteria:

- Wide Range of Rail Capital Projects
 - Congestion mitigation
 - Ridership growth facilitation
 - Enhancements to multimodal connections
 - Improvements to short-line or regional railroad infrastructure
- Railroad Safety Technology
- Track, Station, and Equipment Improvements for Intercity Passenger Rail
- Grade Crossing Improvements
- Rail Line Relocation and Improvement
- Regional and Corridor Service Planning and corresponding Environmental Analyses
- Safety Programs and Institutes
- Research
- Workforce Development and Training
- New in BIL:
 - Measures that prevent trespassing
 - Preparation of emergency plans for hazardous materials are transported by rail.

- Rehab or procurement of locomotives, provided that such activities result in a significant reduction of emissions.

Buy America:

System/Group	Components
Steel used in manufacture of locomotive deck, floor, shell and crashworthiness elements	Side frame structure
	End structure
	Floor structure
	Roof structure
	Integrated cab structure
	Carbody steel (side frame)
	Carbody steel (carbody skin)
Main transformers	Deck
	Transformers
	Invertors
	Contactors
	Rectifiers
	Brake choppers
	Filter inductors

FRA Buy America includes new requirements enacted by the Build America, Buy America (BABA) Act and applies to all FRA grant programs:

- For FRA-funded Projects—the steel, iron, construction materials, and manufactured goods used in the project must be produced in the United States
- FRA Buy America applies to materials purchased with FRA funds and with non-Federal funds
- Consider FRA Buy America requirements in project planning, design, and budget
- Include FRA Buy America requirements in all procurement documents and obtain any necessary certifications to document compliance
- FRA encourages applicants who might seek a waiver to develop and submit a domestic sourcing plan as part of their application

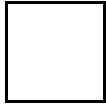
The domestic sourcing plan should include:

- Detail on the extent to which the systems covered by the waiver are to be imported and the extent to which such systems can be sourced domestically
- Explanation of how the recipient anticipates making use of domestic sources for maintenance and replacement of initially imported goods and materials used in the project
- Explanation of the number of domestic jobs, temporary and permanent, that will be generated by the project and outline a plan to transition any foreign labor responsibilities to domestic jobs

9. Accessibility Update – Melissa Shurland, FRA and Kristine Severson, Volpe:

Melissa Shurland, FRA noted that she has provided periodic update over the years on Accessibility, and it was now time for another - more detailed update. She and Kristine Severson, Volpe gave the NGEC members an overview of ADA requirements including a focus on wheelchair Accessibility – ATD Wheelchair Experiments in T2T Testing.

Please see the link to the FRA/Volpe Presentation provided below:



NGEC - ATD-Wheelchair Experiments in T2T Test JG SE MS **is now available**
as a public link.

In the V-333 | Structures and Dynamics workspace

[View your public file](#)

10.

Treasurer's Report and Finance and Administrative Subcommittee (FASC) Update – Tim Ziethen, Amtrak – NGEC Treasurer and Chair of the NGEC Finance and Administrative subcommittee:

Tim Ziethen first provided an overview of the activities of the FASC in 2022:

NGEC Annual By-Laws Review and Update:

- The annual By Law review was conducted by the Finance and Administrative Sub-Committee (FASC).
- Minor changes were recommended, and updates were reviewed and approved by the FASC.
- On December 13, 2022, the Executive Board confirmed and adopted the changes to the By Laws as recommended by the FASC.
- Updated and now current version of the By Laws are posted to the website. An electronic copy is included in today's meeting materials.

Educational and Outreach Document:

- Each year the NGEC has revised its two-page educational and awareness document and has distributed over 2,500 hard and soft copies and continues to keep this key document current with updates to equipment specifications.
- The document highlights the mission of the NGEC; its goals and results to date and reflects progress made in updating and keeping equipment specs current.
- Executive Board approved the revisions in January 2023 and the 2023 version is included with your materials for the annual meeting and can be shared with Stakeholder Community and Legislators. Copies may be requested by contacting Steve Hewitt at shewitt109@aol.com.

Website Refresh:

- Developed proposal for procuring a vendor to review and refresh the NGEC website and to acquire an NGEC website domain.
- Contracted (through AASHTO) with iEngineering to refresh the NGEC website, to improve viewer experience, and enhance public awareness of the NGEC.
- The vendor has completed its work under the direction of the NGEC Executive Board and has gone live with the new site under the domain name ngec.org.

Funding Status:

- The current grant agreement has been amended as noted prior and extends the grant period through September 30, 2023, or until funds are exhausted.
- Funding can be provided directly by the FRA (preferred) or possibly by Amtrak as part of its Grant process (back-up alternative).

- Amtrak applied for a CRISI Grant at the end of November 2022 which, if approved, would provide ongoing funding to the NGE3 305 committee to continue its critical work for the next five years (estimated).

Treasurer’s Report:

- New (Current) Grant executed effective October 2016 and we are tracking against the SOW.
- Spending is consistent and is tracking at about \$14.5k per month.
- Document Control Position moved to AASHTO Services in the prior year.
- Grant Agreement performance period extended through 9-30-2023.
- Financial analysis continues to indicate that at current spending rate, the grant funding should last through the remaining periods.
- The Committee can continue its work beyond the current Grant period subject to securing additional funding.
- Grant Reference FRA-AMT-0010-17-01-00.

Summary Spending From Inception of Grant:

NGE3 305 Grant Reporting		
Current Grant - Period of Performance through 9/30/2023		
WBS C.CF.100674.0001	Technical Assistance	\$ -
WBS C.CF.100674.0002 / B.ME.100032.0001	AASHTO/Services	\$ 1,067,111.58
WBS C.CF.100674.0003	Administrative Task Force	\$ 4,478.84
WBS C.CF.100674.0004	Executive Board	\$ 793.29
Total Grant Spending (Invoiced through November 2022)		
Total Invoiced/Incurred		\$ 1,067,111.58
Other Administrative Expenses		\$ 5,272.13
Total Incurred for all WBS Line Items		\$ 1,072,383.71
Grant Total		\$ 1,250,000.00
Remaining Funds		\$ 177,616.29
Estimated spend at current rate for balance of Grant		\$ 144,916.72
Current Average Monthly Spend		\$ 14,491.67
Estimated Balance at End of Grant Period		\$ 32,699.57

Note: New Web Site Design is authorized and will reduce the ending balance projection shown by approximately \$12,000.00

Budget (New Grant Statement of Work 10/1/2016);

	Executive Board	Technical Sub-committee	Finance & Admin Sub-committee	"514" Equipment Capital Sub-committee	AASHTO Support Services	TOTAL
Labor		\$72,000	\$90,000		\$100,000	\$262,000
Meetings					\$90,000	\$90,000
Travel	\$0		\$10,000	\$0	\$90,000	\$100,000
Professional Services	\$0				\$682,000	\$682,000
Financial Review			\$100,000			\$100,000
Conference Calls					\$12,000	\$12,000
Webinar					\$3,000	\$3,000
Web Site					\$1,000	\$1,000
Other						\$0
TOTAL	\$0	\$72,000	\$200,000	\$0	\$978,000	\$1,250,000

Future Activities

- Continue to explore funding opportunities that could be made available through the FRA or alternatively from Amtrak, while following CRISI Grant process.
- Continue to provide educational information on the NGEC to sister agencies (SPRC, AASHTO, Amtrak), the industry, and Congress (when requested).
- Keep the new NGEC website current and useful.
- Explore additional options to increase awareness of the activities and benefits derived from the work of the NGEC.
- Conduct ongoing review and updating of PRIIA vehicle technical specifications; monitoring multi-state vehicle procurements; develop new vehicle specifications as identified, explore new technologies and identify additional lessons learned and ongoing updating of best practices.

Tim Ziethen added that the NGEC is likely "the best kept secret" in DC and it is critical that "we get the story out". The NGEC has quietly and effectively been doing its work with very limited funding and a tremendous amount of in-kind and voluntary services for nearly thirteen years.

It has been a good steward of its funds and is now at a point where it needs renewed funding to continue to maintain and update its specifications and look at new technology and what those impacts are on the current specs and/or what new specifications should be developed to continue to grow and improve the passenger rail experience in the US.

11.

Acceptance of the NGEC Treasurer's Report – Ray Hessinger:

Following the FASC update and Treasurer's Report, Chairman Hessinger called for a motion to accept the FASC update, and the Treasurer's Report as submitted.

On a motion by Richard Kedzior, Wisconsin DOT and a second by John Oimoen, Illinois DOT, the Treasurer's Report and FASC update were accepted by the NGEC Executive Board as presented.

12.

NGEC Technical Subcommittee Progress Report – George Hull, Amtrak CMO and Vice Chair of the NGEC and Chair of the Technical Subcommittee:

NGEC Technical Subcommittee:

- Main purpose is to develop specifications as requested by the Executive Board.
- Comprised of representatives from Amtrak, FRA, States, and rail equipment manufacturers and suppliers.
- Currently we have eleven states involved; California, Connecticut, Illinois, Iowa, Maine, Missouri, New York, North Carolina, Oregon, Washington, and Wisconsin.

- Presently over 200 volunteer industry participants. Open to anyone from companies/consultants involved in rail.
- Majority of spec writing done by members of the six permanent working groups on a volunteer basis with support from a technical writer and the document control manager.

Specification Creation Process:

George provided a snapshot of the NGEC procedures for developing a specification:

Basically, it starts with the Executive Board tasking the Technical subcommittee with developing a Requirements Document. The Board adopts the Requirements Document and directs the subcommittee to develop the relative vehicle specification. Once developed and approved at the subcommittee level it is sent by the Executive Board Chair to the related Specification Review Panel. The Panel prepares a report with recommendations. The Executive Board considers and ultimately accepts the report and its recommendation and adopts the Vehicle Specification.

(see presentation for additional details and diagram)

Revising Specifications:

New specifications are issued as initial release, version IR. A thorough process for managing change control and Revision approval is in place. This process can take months, typically DCR's are processed, and a specification is revised after several DCRs have been received.

- There is an Urgent DCR process to address issues that may come up during a procurement. This pushes a DCR through the system in less than two weeks.

Document Change Request Form (DCR)

- Changes can be proposed by anyone using a DCR.
- Evaluated by the TWG responsible for the section affected.
- Approved by the TWG.
- Approved by the Technical Subcommittee
- Sent to Executive Board
- Review panel reviews for compliance with requirements document.
- Executive Board approves.

Equipment Specifications Created and Updated To Date:

- Bi-Level: Rev D – 02/2023
- Locomotive: Rev B – 06/2017
- Single Level: Rev B.2 – 02/2019
- Trainset: Rev B – 1/2022
- DMU: Rev A – 1/2022
- Dual Mode Loco: IR – 02/2016

Technical Subcommittee Highlights – 2022:

- Vehicle Weights Working group progressed industry discussions to develop guidance document.
- Created Communications on Cars working group.
- Bi-Level Specification Update Rev D – Technical subcommittee work completed in January 2023.

Technical Subcommittee Active Efforts:

Active working Groups and Studies

- Permanent Technical Working Groups
 - Structural, Interiors, Mechanical, Propulsion, Electrical, and VTI
- Carbody Materials Working Group
- Vehicle Weights Working Group
- Communications on Rail Cars Working Group
- University of Nebraska/FRA High Speed Wireless Study
- Locomotive Technology Task Force
 - Pending Reactivation for Energy Alternative and NZ efforts in 2023.

13.

Document Management Progress Report and a look at the year ahead – Tammy Krause, Document Control Manager:

Working Groups:

- Structural WG – Anand Prabhakaran
- Communications WG – Ken Martin
- Electrical WG – Tammy Krause
- Mechanical WG – Jeff Gordon
- Propulsion WG – Rich Stegner
- Interiors WG – Blair Slaughter
- Materials WG – Michael Gill
- Weights WG – Jeff Gordon
- VTI WG – Brian Marquis

New Materials Working Group:

- New group created to explore alternate Carbody Materials as a result of discussions following the DMU specification.
- Previously all PRIIA Passenger Car Bodies were Stainless Steel.
- New requirements, references and standards need to be added to the specifications.
- Working with the single level specification to review and propose revisions required with allowing alternate materials.
- Updates to the specification will be applied to the other specifications.

Working Group Updates:

- Communication WG
 - Formerly the Electronics on Trains WG
 - Communication technology is constantly changing, and it was decided that there was a need for a separate WG.
 - The Communications sections of the specifications were previously handled by the Electrical WG
 - The Digital Train Line Hardware Specification will no longer be updated due to on-going technology advancements.

Bi-Level Specification Update:

- The Bi-Level Specification Revision C5 was approved by the TSC on 1/19/23. It is currently under review by the EB.
- The Bi-Level Specification was updated to Rev C5 with 175 changes that were approved by the Working Groups and Technical Subcommittee.

Future Plans:

- Continue to review the APTA PRESS Standards and Recommended Practices for updates that may require changes to our specifications.
- Update the Single Level Specification. It is currently at Revision B2, dated 1/12/2019.
- Update the Diesel Electric Locomotive Specification. It is currently at Revision B, dated 6/20/2017.
- Review “Emerging Technologies” for alternative propulsion options.

Review/Update NGEC References and Drawings Series 305-800 and 305-900:

The NGEC makes available Reference specifications series 305-900 and reference drawings – series 305-800 which can be obtained via the NGEC process. These document/drawings are due for a review and update as well as the other

NGEC specifications, and the intent is to conduct this review in 2023.

14.

Presentation: Hydrogen Fuel Cell Multiple Units – Ryan Sharpe, Caltrans, and Martin Ritter, Stadler.

Ryan Sharpe kicked off the presentation with the following update:

Regulatory environment: Off-road vehicle fleets, including passenger trains, must be 100% emissions-free by 2035:

- Our goal is to have a 100% zero-emission intercity rail fleet by 2035.
- Rail timeline is more aggressive than other.
- This goal will ensure that rail retains its environmental advantage and remains competitive with other modes.
- Some modes are required by legislation to move towards ZE and others are mandated by executive order
 - All bus purchases have to be zero-emission from 2029 onwards and the fleet needs to be zero-emission by 2040.
 - Only ZE cars can be sold in California from 2035 onwards.

Strategy: The transition to ZE equipment encompasses existing routes as well as planned routes:



Range: Hydrogen will serve as the long-term primary power source for the Caltrans intercity fleet to achieve ZE:

New opportunities: ZEMU vehicles will be used to expand passenger rail service in California.

Caltrans developed a concept for a possible ZEMU vehicle for a 4- and 5-car train aimed at expanding passenger rail service in California:

Caltrans targeted characteristics are:

- Of course, Zero-emission operation
- Hydrogen while provide a relatively long range and enable fast fueling.
- Batteries allow for regenerative braking reducing energy consumption and provided power during

acceleration and high-demand phases.

- The vehicle design is intended for vehicles to be deployed throughout the state, expanding passenger rail service in California.
- The targeted passenger capacity is ~200 seats.
- The targeted maximum vehicle speed is 90 mph.
- Our estimated maximum vehicle range is ~1000 miles for the 4-car, and ~800 miles 5-car under favorable conditions.

As some may know, Caltrans, CalSTA, and Stadler are in negotiations for design and delivery of 4x ZEMUs for Valley Rail

And on September 20, 2022, Caltrans, CalSTA, and Stadler signed a Letter of Intent for an option of additional 25x trains for other routes in California.

This is the future of zero-emission technologies.

(See complete presentation attached with Minutes and posted to NGEN website)

Following on Ryan's overview, Martin Ritter provided an update from Stadler Rail:



Stadler FLIRT conversion

Based on the FLIRT EMU

FLIRT DMU SBCTA	
Speed	80 mph
Seats	104
Cars	2 + Power Pack
Vehicle Length	163ft
Propulsion	Diesel Power Pack

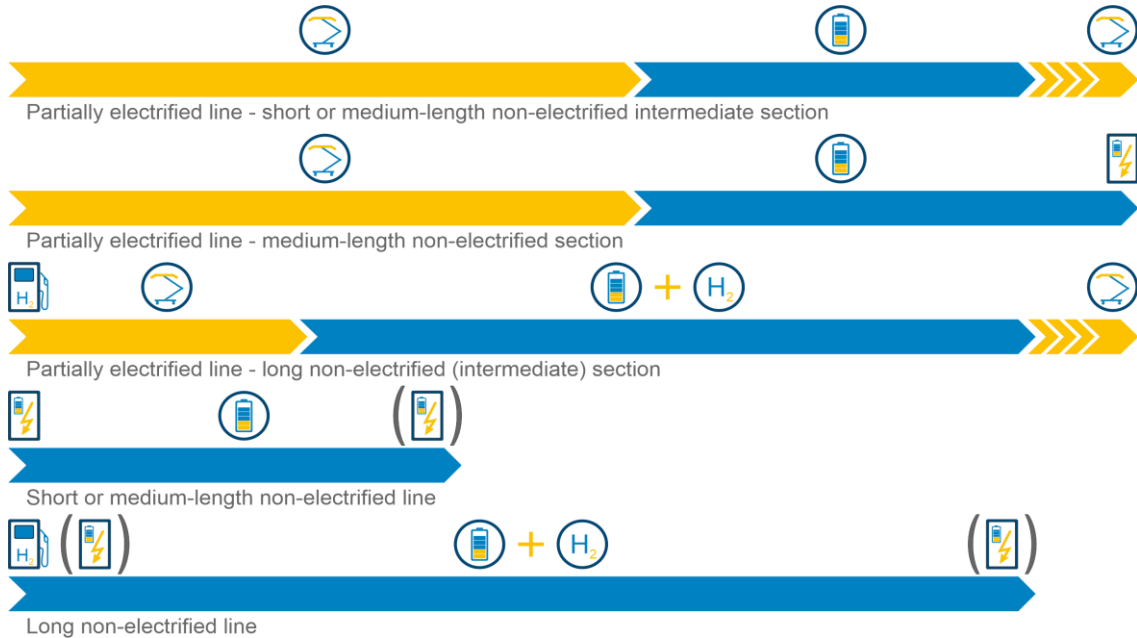
FLIRT H2 SBCTA

Speed	80 mph
Seats	116
Cars	2 + Power Pack
Vehicle Length	167ft
Propulsion	H2 Power Pack

FLIRT H2 SBCTA

Speed	80 mph
Seats	116
Cars	2 + Power Pack
Vehicle Length	167ft
Propulsion	H2 Power Pack

Configuring ecological drives



Project Progress

Flirt h2 for sbcta & flirt zemu for usu

FLIRT for SCBTA:



Timeline: Testing 2023 – First H2 Train in service 2024

Flirt for ZEMU USU:



Timeline: Testing Train 2025 - Revenue service ready ZEMU Battery Train 2026

(See complete presentation attached with Minutes and posted to NGEN website)

15.

Presentation: High Speed Wireless Study – Hamid Sharif, University of Nebraska:

Wireless Study: Investigation of 160MHz RF-Band Usage and Optimization

Hamid Sharif

Charles Vranek Professor, Electrical and Computer Engineering
Director, Advanced Telecommunications Engineering Laboratory

University of Nebraska-Lincoln

Outline:

- An Overview of UNL's TEL Lab
- Introduction to Project
- RF Challenges in Rail Industries
- Solutions and Contributions
- Results
- Conclusion
- Publications

An Overview of UNL's Tel Lab:

- Advanced Telecommunications Engineering Lab (TEL) is a part of the Electrical and Computer Engineering Department at the University of Nebraska-Lincoln.

- TEL is a research facility with state-of-the-art infrastructure in computing and communications.
- TEL is equipped with:
 - A host of Real-Time Simulation platforms such as OPAL-RT,
 - Wireless capabilities such as Channel Emulator (Azimuth System)
 - High-Performance computing platforms
 - Access to UNL's supercomputing infrastructure.
- Research Projects:
 - Wireless and RF Systems
 - Communication Networks
 - Cybersecurity
 - Sensors and IoT
 - Embedded System Design
- Projects supported by NSF, DOT, FRA, DOD, DOE, National Labs, and Rail Industries.

Introduction to the Project:

- RF Resources scarce but need to be available across the industry's entire North American operating area.
- Limited Radiofrequency (RF) spectrum resources in the rail industry
- Unlicensed bands highly congested
- Extremely expensive to license new RF bands.
- Example: Positive Train Control (PTC)
 - PTC operates at 220 MHz.
 - Significant congestion in some areas such as: the Chicago area, Northeastern Corridor
 - Spectrum resources are limited within those areas, no additional channels are available, and coexistence problems when deploying additional PTC radios.

Potential Solution:

- Exploring the adoption of underutilized or abandoned RF bands for wireless applications development in the railroad industry.
- Evaluate the suitability of specific bands for voice & data applications, as well as provide additional operating channels for congested rail traffic areas.
- 160MHz is underutilized, but licenses are owned by the railroad industry across North America.
- Specifically, study 160MHz, for applications such as onboard signaling and long-range wayside communications.

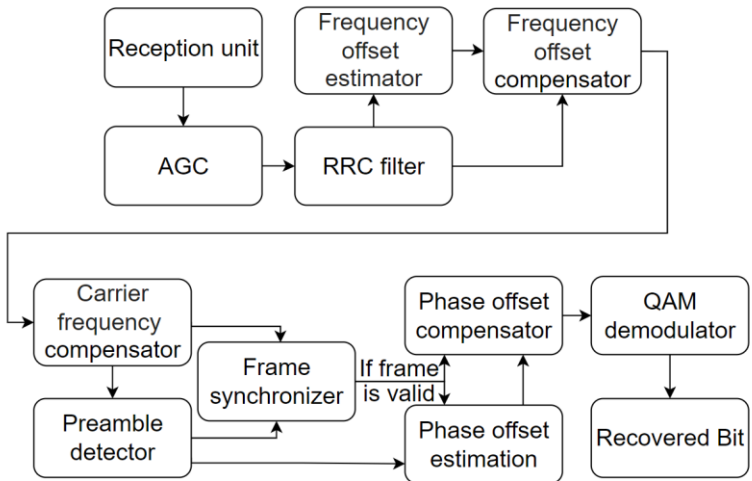
Project Contributions:

- Design and develop extensive computer simulation models to evaluate the 160 MHz communications system for railroad applications.
- Simulation-driven Performance Analysis
 - Single and multi-carrier (OFDM) transceiver
 - Railroad-applicable channel models
- Protocol stack model and analysis for railroad applications
 - Analyze and maximize its end-to-end performance.
- Hardware implementation and evaluation using Software Radios
 - Implementing the designed system on USRP X310
 - Lab and field testing to validate the simulation-based analysis.

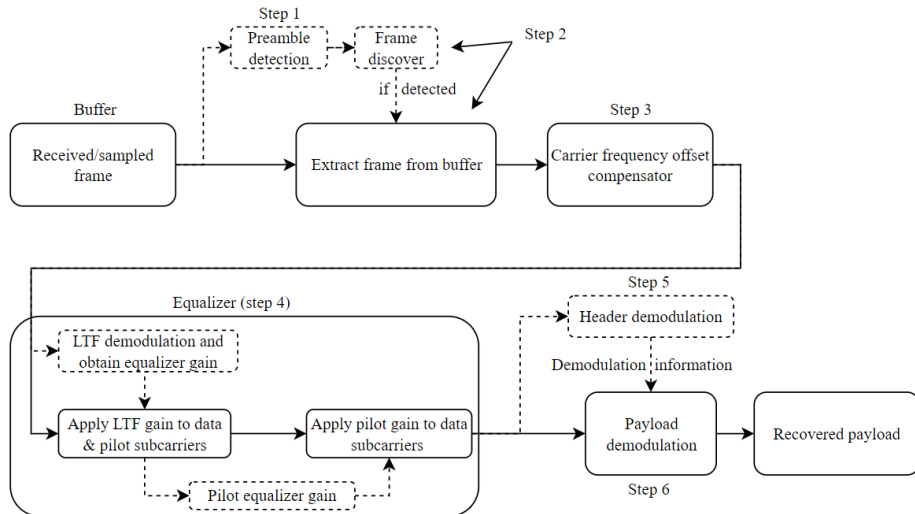
Simulation-Driven Prototype Design:

- Aims to design an advanced performance-maximizing RF transceiver.
- Fully conformant to FCC regulations, Spectral Mask E and D for 160MHz
- Exploration of both Single-Carrier and Multi-Carrier Design

Single-Carrier RX

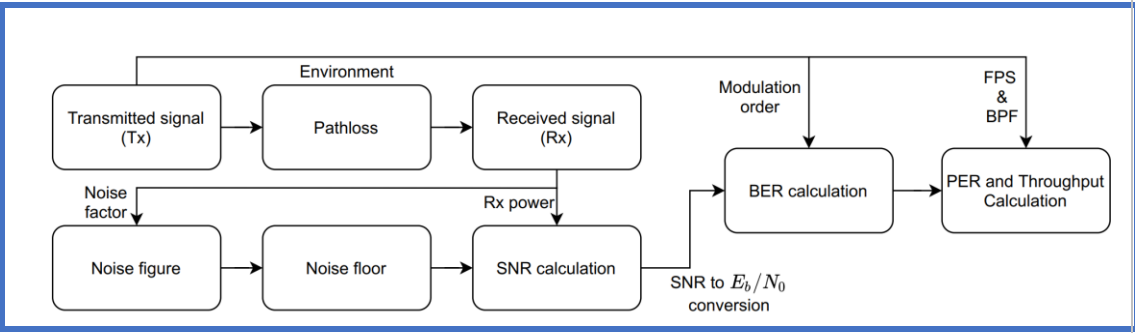


Multi-Carrier RX



Simulation-Driven Prototype Design:

- Fully implemented simulation model in Matlab
- Comprehensive evaluation of Performance and Distance



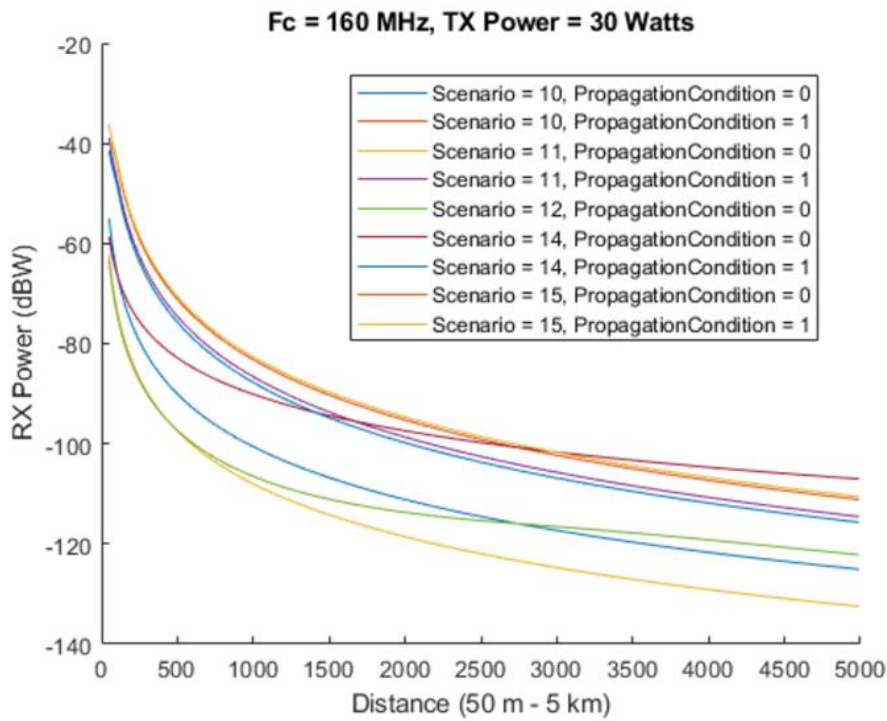
- Selected railroad-appropriate RF channel models:

- Okumura; Hata;
Two-Ray Ground Reflection; WINNER-2

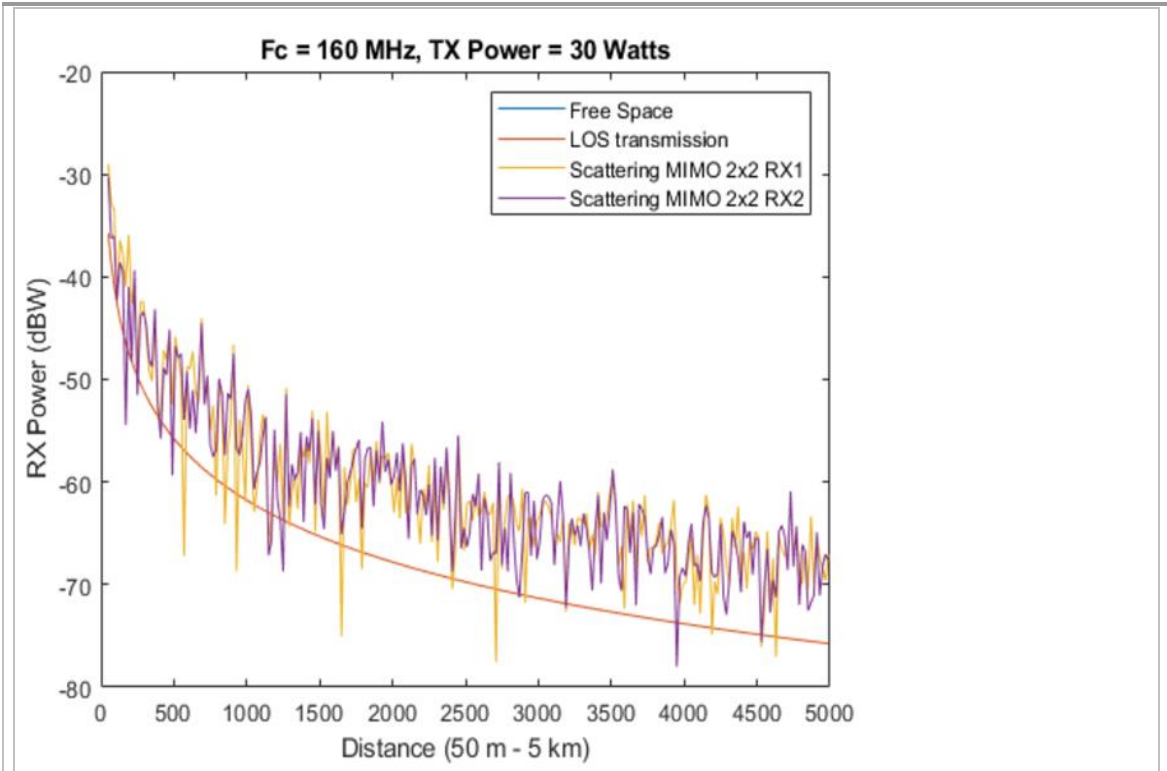
- Results from evaluating Path Loss Models:

Winner 2 Sub-Model Scenarios

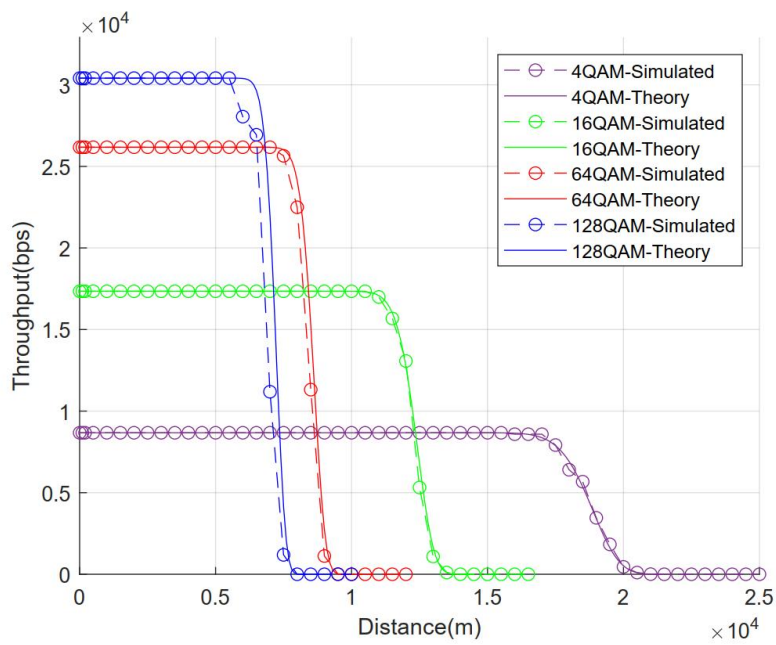
Multipath Scattering Model vs. Reference Models



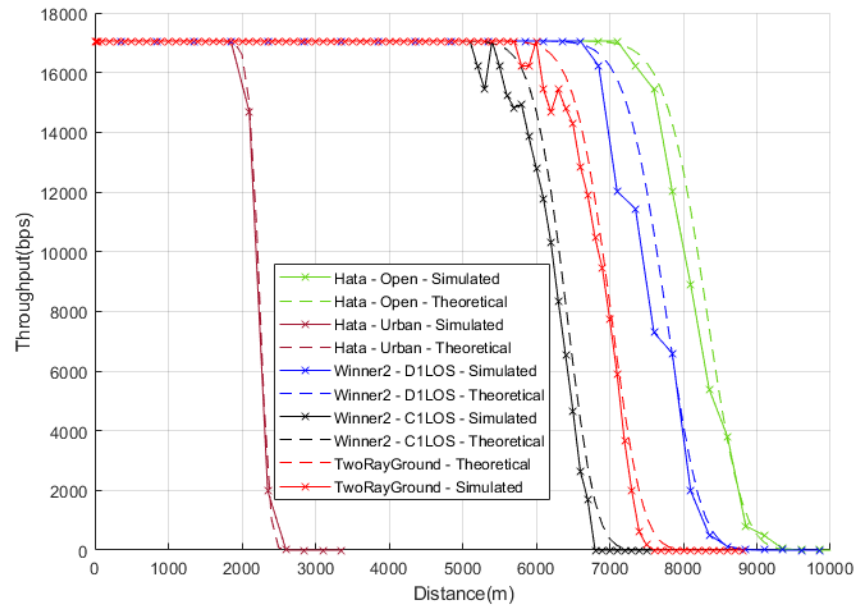
Multipath Scattering Model vs. Reference Models



- Example of Results:
Single-Carrier Throughput

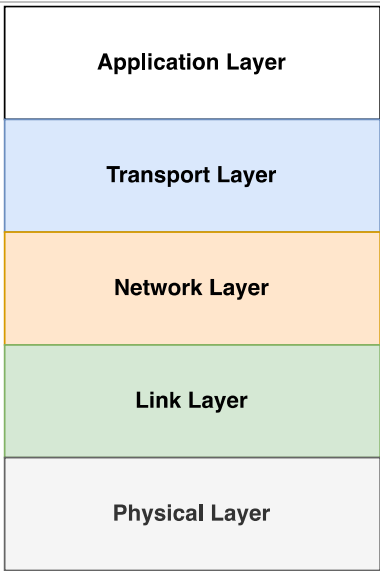


Multi-Carrier Throughput

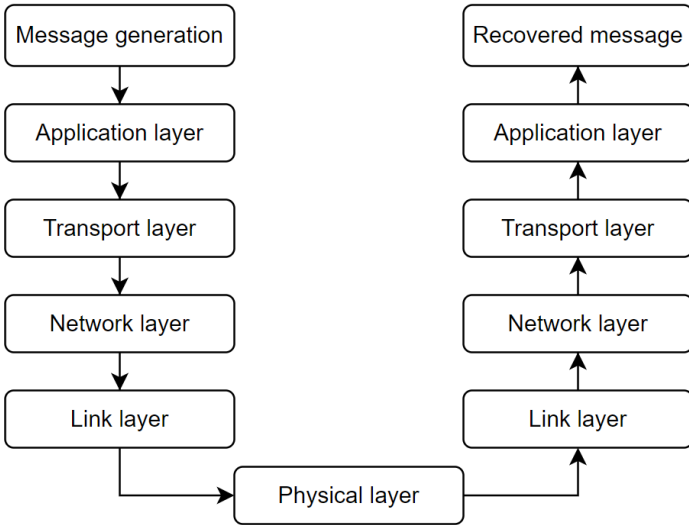


Protocol Stack Design:

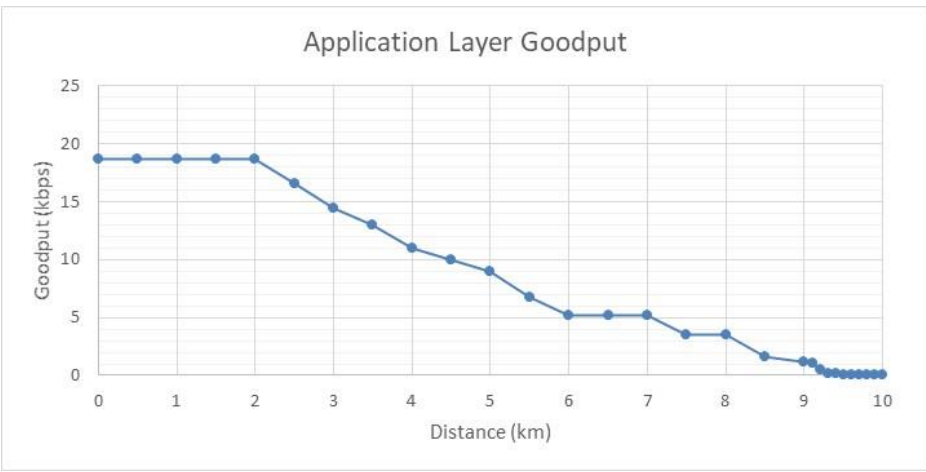
- Message Generation Models:
 - Constant Bitrate
 - Gaussian
 - Uniform
 - Poisson
 - Fixed delay
- Scenarios of Interest:
 - Best/mid/long-range 2-node validation
 - Best-case for latency/packet loss rate/throughput
 - Performance under Full/reduced contention
- Designed an implemented full protocol stack for transceiver design
- Feasibility demo using Event-based Communications Application
 - Examples: Train Approach Detection System, Emergency Trigger, etc.

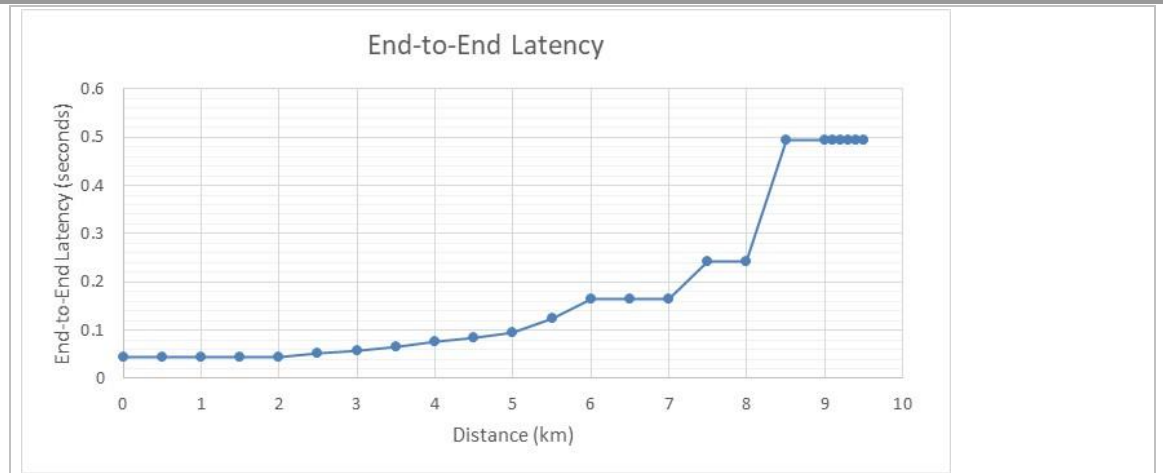


- implements the target application
- example chosen: event reporting, such as train approach detection
- handles end-to-end data exchange coordination
- we opted for datagram exchanges due to lower overhead and higher performance
- handles routing and end-to-end message delivery
- handles link control and message exchange between neighboring nodes
- handles message framing, error correction, etc.
- handles access of physical medium, modulation, and other signal processing aspects



• **Example Results:**

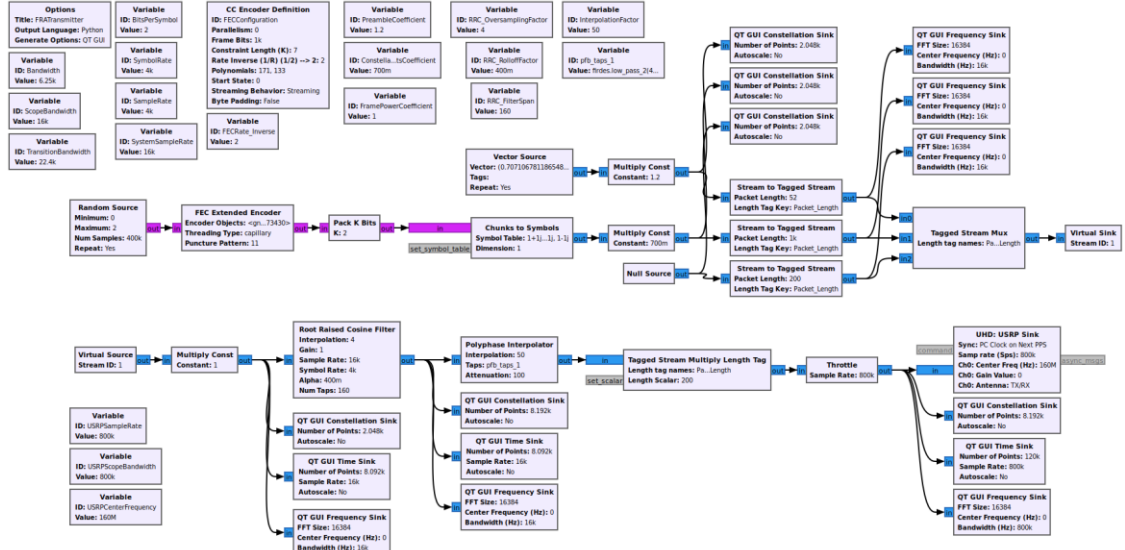




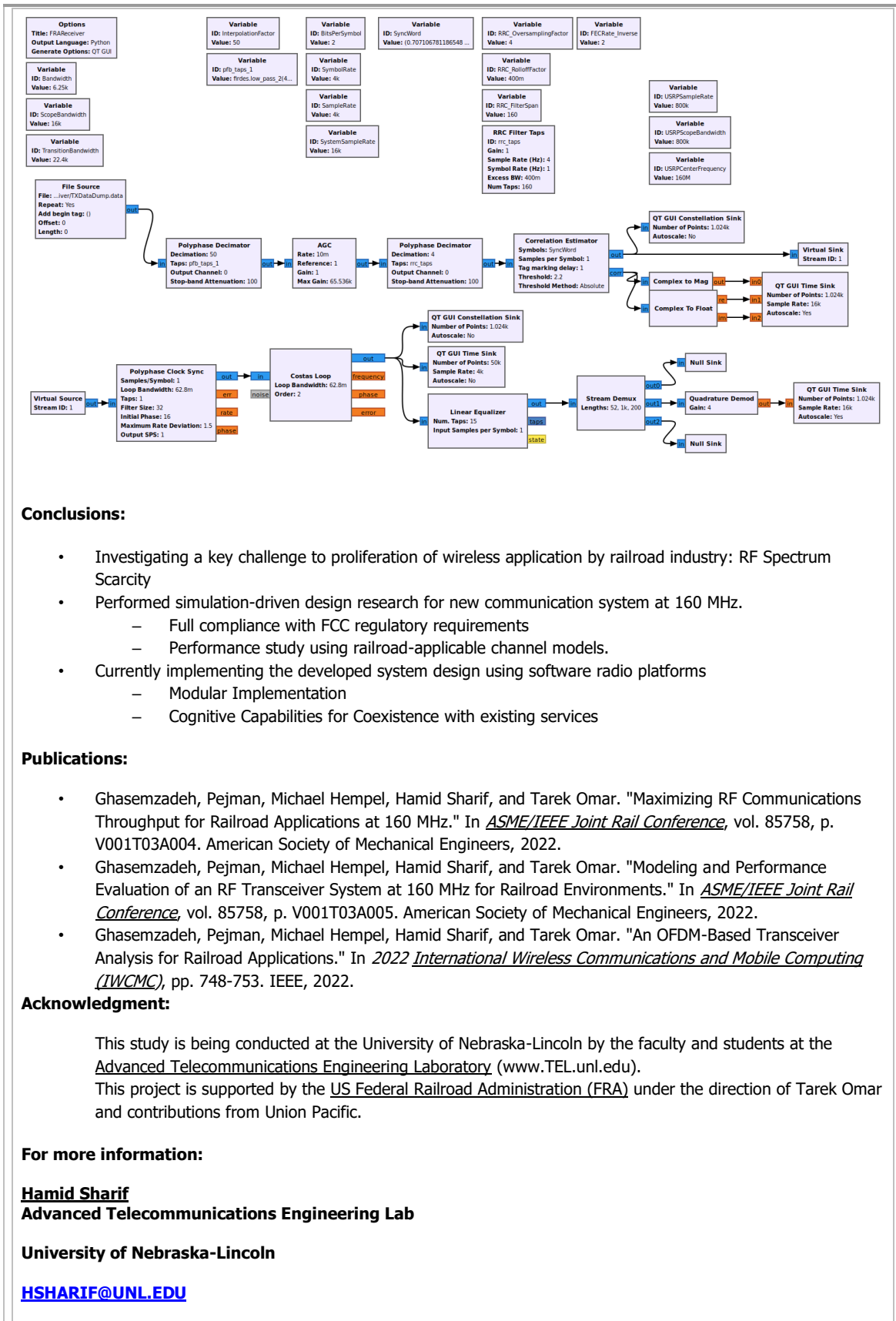
Prototype Implementation:

- Transmitter and Receiver are being implemented on TEL Lab’s USRP X310s for lab and field testing.
- Utilizes GNURadio Open-Source Software Radio Suite
- Current Phase-IV Effort aims to be modular, reusable.
- Also provisions Cognitive Radio capabilities.
 - Coexistence with primary services in target RF band

Prototype Implementation – Transmitter:



Prototype Implementation – Receiver:



Conclusions:

- Investigating a key challenge to proliferation of wireless application by railroad industry: RF Spectrum Scarcity
- Performed simulation-driven design research for new communication system at 160 MHz.
 - Full compliance with FCC regulatory requirements
 - Performance study using railroad-applicable channel models.
- Currently implementing the developed system design using software radio platforms
 - Modular Implementation
 - Cognitive Capabilities for Coexistence with existing services

Publications:

- Ghasemzadeh, Pejman, Michael Hempel, Hamid Sharif, and Tarek Omar. "Maximizing RF Communications Throughput for Railroad Applications at 160 MHz." In *ASME/IEEE Joint Rail Conference*, vol. 85758, p. V001T03A004. American Society of Mechanical Engineers, 2022.
- Ghasemzadeh, Pejman, Michael Hempel, Hamid Sharif, and Tarek Omar. "Modeling and Performance Evaluation of an RF Transceiver System at 160 MHz for Railroad Environments." In *ASME/IEEE Joint Rail Conference*, vol. 85758, p. V001T03A005. American Society of Mechanical Engineers, 2022.
- Ghasemzadeh, Pejman, Michael Hempel, Hamid Sharif, and Tarek Omar. "An OFDM-Based Transceiver Analysis for Railroad Applications." In *2022 International Wireless Communications and Mobile Computing (IWCMC)*, pp. 748-753. IEEE, 2022.

Acknowledgment:

This study is being conducted at the University of Nebraska-Lincoln by the faculty and students at the [Advanced Telecommunications Engineering Laboratory](http://www.TEL.unl.edu) (www.TEL.unl.edu). This project is supported by the [US Federal Railroad Administration \(FRA\)](http://www.fra.dot.gov) under the direction of Tarek Omar and contributions from Union Pacific.

For more information:

Hamid Sharif
Advanced Telecommunications Engineering Lab
University of Nebraska-Lincoln

HSHARIF@UNL.EDU

16.

Update: Equipment Procurements:

The NGEC specifications have been used as the base spec for all new passenger rail equipment in recent years across the US and our neighbors to the north.

At each Annual meeting of the NGEC we get updates on many of the key procurements that are ongoing and we learn about the progress they have made.

This year the following presentations were given:

- a. Multi-State Single Level Venture Cars – Ryan Sharpe, Caltrans
- b. Amtrak Fleet Procurements - Dan Ruppert, Amtrak
- c. Metro-North Dual Mode Locomotive Procurement – Lew Hoens, Metro-North Railroad, John Batey, STV, Inc.
- d. VIA Rail Equipment Procurements – Erika Santana, VIA Rail and Jean-Phillipe Quintal, VIA Rail

As the files are too big to put into the minutes, these presentations will be sent out to NGEC members and have been sent to AASHTO for posting on the NGEC website at www.ngec.org/meetings/2023

17.

FRA Administrator Amit Bose – Remarks:

FRA Administrator Amit Bose dropped by the meeting for the second year in a row. The NGEC members were pleased to welcome the Administrator and were very much appreciative of him taking the time to come by.

Chairman Hessinger welcomed the Administrator to the podium to address the members:

Administrator Bose told the NGEC members that he “dropped by” to say thank you and to “stress how important I view the ongoing work of the Committee and what you have done to date.” He went on to say that “equipment is a part of the capital side”. He is excited to see the passenger rail industry be reinvigorated by the IIJA provisions and the number of orders that will come from the new federal funding opportunities the bill provided.

The Administrator noted that of the \$66 Billion (\$102 Billion authorized) in 2022 - \$16 billion is “on the street”. Over \$4 billion directly to Amtrak.

He added that there is “a lot of money out there...equipment is going to be a big point and I am relying on you in this room.”

For Amtrak and the manufacturers and suppliers there are “high expectations and the challenges specific to equipment and to safety standards.” He noted that “at FRA we are engaged... we see the people working on railroad development”. FRA has realigned itself to better deal with passenger rail and are organizing to “meet the moment” and “I am asking you all to do the same”.

The Administrator went on to note that a key part of what the President rolled out in the IIJA was a focus on equipment needs as well as rail infrastructure improvements such as the Hudson Tunnels.

Passenger rail “is very much on his mind and the mind of Secretary Buttigieg and on my mind.”

Key components include domestically sourced – jobs creation – a competitive procurement process.

“The enthusiasm level is big...your work feeds into that effort...we have the money” now, but the “next five-year bill is not far away...if we can show “on time and on budget” equipment, “the next bill will recognize that.”

The Chair thanked the Administrator for his thoughtful remarks and for coming to our meeting once again. He noted how much his interest in the NGEC means to us all.

18.

Charger Locomotive and Venture Car Experience:

The first specifications developed by the NGEC were used in procurements across the US and our neighbors to the north. During each of the NGEC Annual Meetings since these procurements were begun, the entities involved in those procurements have given presentations to inform our members of their experience with the Charger locomotives and the Venture passenger rail cars.

In 2023 we heard about:

- a. The Mid-West States Experience – Jennifer Bastian, IDOT
- b. The California Experience – Ryan Sharpe, Caltrans
- c. The Washington State Experience – Jason Biggs, WSDOT
- d. The Amtrak Experience – George Hull, Amtrak

As the files are too big to put into the minutes, these presentations will be sent out to NGEC members and have been sent to AASHTO for posting on the NGEC website at www.ngec.org/meetings/2023

19.
2023 – A look Ahead – Ray Hessinger:

Before I give my closing remarks and look ahead to 2023, I want to again acknowledge today's presenters.

Thank you for the time and effort you put into preparing your presentations and for joining us today, either in-person or virtually.

It is your presentations that bring people here to DC for our annual meeting, because I'm fairly certain that most of the people in the audience and on-line don't care too much about our meeting minutes or financial reports (sorry, Tim...)

The NGEC enters 2023 under a cloud of uncertainty. The current grant agreement with the FRA expires on September 30th, and at our current spend rate, our funding will be exhausted at about the same time.

Only one thing is certain this year - 2023 will include grant close out activities with the FRA for the current grant agreement.

Beyond that, our activities for 2023 will largely depend on whether Amtrak's CRISI application on behalf of the NGEC gets selected for funding.

If Amtrak's CRISI grant is not selected for funding, and no other source of funding is identified between now and September, the NGEC will spend 2023 wrapping up some ongoing tasks and winding down the organization.

We will finish the current update and publish the revised bi-level specification, which is on the cusp of Executive Board approval.

We would expect the Working group on Weight to wrap up its efforts, but it is unlikely that there will be time and resources to incorporate any of its recommendations into our specifications.

Beyond that, we will review the budget after the annual meeting and bi-level specification are complete to see what resources we have left for the balance of the grant period and see what tasks can be accomplished the funds and time remaining on the grant. Admittedly, it is a fairly bleak outlook.

But on a more positive note, if CRISI funding is forthcoming, it provides an opportunity to reinvigorate the organization, bring in new members and continue our support of the reestablishment of a domestic passenger rail car industry.

Amtrak will enter into a new grant agreement with the FRA on behalf of the NGEC and we will be required to put forth a new scope of work, based on the content of the CRISI application. This includes:

- *Renew agreements with AASHTO and support consultants.*
- *Continuing work to keep our existing specifications current.*
 - *Incorporate the recommendations from the Working Group on Weight*
 - *Continue the systematic update of each specification.*
- *Expanding our portfolio of specifications*
 - *Continue work on aluminum carbody specifications.*
 - *Consider the need to expand the NGEC into the high speed and long-distance equipment arena.*

Other activities include increased public outreach to foster participation by segments of the industry that are underrepresented in the organization, including academia and labor.

It is an exciting opportunity to advance the NGEC into the future and is the one I hope to see come to pass.

With that, I will open the floor to any questions or comments.

20.

Other – all:

With no other business forthcoming, Chairman Ray Hessinger adjourned the 13th NGEC Annual Meeting at 12:40 pm Eastern.

Next – 14th Annual Meeting – 2024

Next regular Executive Board Webex meeting 2-21-23

Decisions/Action Items

2023 NGEC Backgrounder educational document:

The 2023 version of the two-page educational flyer is now available and was distributed in hard copy at the Annual Meeting.

You may view the educational document on the NGEC website at www.ngec.org

The Treasurer’s Report:

Treasurer Tim Ziethen provided a FASC update and the Annual Treasurer’s Report during the 2-3-23 NGEC Annual meeting. (The report is inserted into these minutes.)

The NGEC Board accepted the Treasurer’s report via voice vote as presented.

A Look ahead – assuming the NGEC/Amtrak CRISI Grant is awarded so that the work of the NGEC can continue:

A new scope of work will be developed, based on the content of the CRISI application. This includes:

- *Renew agreements with AASHTO and support consultants.*
- *Continuing work to keep our existing specifications current.*
 - *Incorporate the recommendations from the Working Group on Weight*
 - *Continue the systematic update of each specification.*
- *Expanding our portfolio of specifications*
 - *Continue work on aluminum carbody specifications.*
 - *Consider the need to expand the NGEC into the high speed and long-distance equipment arena.*

Other NGEC activities include increased public outreach to foster participation by segments of the industry that are underrepresented in the organization, including academia and labor.

Annual Meeting Presentations:

All presentations will be posted on the NGEC website at www.ngec.org in the Meetings Section.

Next regular Executive Board Webex meeting – 2-21-23

**Next Generation Equipment Committee (NGEC)
13th Annual Meeting (Hybrid)
February 3, 2023
8:00 am – 12:30 pm Eastern
Capitol Room- A/B
Hyatt Regency, Capitol Hill, Washington, DC**

or
By computer:

<https://stephenhewitthewittconsulting.my.webex.com/meet/shewitt109>

By phone:

1-415-655-0001

Access code:

126-073-1531

8:00 - 8:25 am	Registration
8:25 – 8:30 am	Hotel Safety Briefing – Hotel Staff
8:30	Convene Annual Meeting - Ray Hessinger, NGEC Chair
8:30- 8:40 am	Self introductions
8:40 – 8:45 am	Roll call voting members – establish quorum: Steve Hewitt, NGEC Program Manager
8:45 – 8:50 am	Review Meeting Agenda: Ray Hessinger Review Meeting Packets: Steve Hewitt
8:50 – 8:52 am	Approval of the Minutes from the January 24, 2022, Executive Board meeting – Ray Hessinger
8:52 – 9:05 am	Chairman’s Report – Ray Hessinger
9:05 – 9:15 am	Overview: NGEC’s Website refresh – Ray Hessinger
9:15 - 9:25 am	Update from Amtrak Government Affairs – Ran Barton
9:25 - 9:40 am	Updates from the Federal Railroad Administration: Gary Fairbanks – Update from the Passenger Safety Working Group Mike Murray – Update on Federal Funding Opportunities
9:40 – 9:55 am	Accessibility Update – Melissa Shurland, FRA, and Kristine Severson, Volpe
9:55 – 10:10 am	Treasurer’s Report & Finance & Administrative Subcommittee progress report - Tim Ziethen, Amtrak
10:10 – 10:12 am	Acceptance of the Treasurer’s Report – Ray Hessinger, Amtrak
10:12 - 10:20 am	Break
10:20 - 10:35 am	Technical Subcommittee Progress Report – George Hull, Amtrak, and NGEC Vice Chair
10:35 - 10:45 am	Document Management Progress Report & look at the year ahead – Tammy Krause, Document Control Manager
10:45-11:00 am	Presentation: Hydrogen Fuel Cell Efforts— Ryan Sharpe, Caltrans Stadler Zero Emission Multiple Units - Martin Ritter, Stadler Rail
11:00 – 11:15 am	Presentation: High Speed Wireless Study – Hamid Sharif-Kashani, University of Nebraska
11:15 – 11:55 am	Update: Equipment Procurements
	e. Multi-State Single Level Venture Cars – Ryan Sharpe, Caltrans
	f. Amtrak Fleet Procurements - Dan Ruppert, Amtrak
	g. Metro-North Dual Mode Locomotive Procurement – Lew Hoens, Metro-North Railroad John Batey, STV, Inc.
	h. VIA Rail Equipment Procurements – Erika Santana, VIA Rail

11-55 am – 12:15 pm	Charger Locomotive and Venture Car Experience e. Mid-West States Experience – Jennifer Bastian, IDOT f. California Experience – Ryan Sharpe, Caltrans g. Washington State Experience – Jason Biggs, WSDOT h. Amtrak Experience – George Hull, Amtrak
12:15pm – 12:25pm	2023 – A look Ahead – Goals and Priorities – Ray Hessinger, NGENC Chair
12:25 pm – 12:30pm	Questions/Comments/Other Issues - All Attendees
12:30 pm	Closing Comments/Actions/Adjourn – Chair

2023 NGENC Annual Meeting Registration as of 2-2-23 – actual attendance: at least 65 in-person 50 virtual

In Person (59)

Executive Board:

Ray Hessinger, NYSDOT
George Hull, Amtrak
Tim Ziethen, Amtrak

Mike Jenkins, Oregon
Jason Biggs, WSDOT
Ryan Sharpe, Caltrans
Troy Hughes, MODOT
John Oimoen, IDOT
Richard Kedzior, WisDot

Jason Orthner, NCDOT

Matthew Simmons, NCDOT

Amit Bose, FRA Administrator

Support/Speakers/Colleagues:

Steve Hewitt, NGENC Manager
Tammy Krause, NGENC Document Control Manager
Larry Salci, Salci Consult – NGENC Technical Consultant
Dave “PowerPoint” Warner
Kirk Fredrickson, WSDOT
Marci Petterson, CtDOT
Jennifer Bastian, IDOT
James Glaspie, Iowa DOT
Jon Dees, NCDOT
Joe Paul, Amtrak
Arun Rao, Amtrak
Dan Ruppert, Amtrak
Shayne Gill, AASHTO
Strat Cavros, AASHTO
Rebecca Anger, AASHTO
Adam Krom – Amtrak
Blair Slaughter – Amtrak
Hamid Sharif-Kashani – University of Nebraska
Mike Murray – FRA

Virtual (50)

Jeff Gordon - FRA

Amanda Martin, IOWA DOT
Kyle Gradinger, Caltrans

Brian Beeler II, NNEPRA for Maine DOT

Lew Hoens, Metro-North Railroad
John Batey, STV, Inc.
Patrick Centolanzi, FTA
Gurleen Boparai, Caltrans
Ronald Bartels, VIA Rail
Erika Santana, VIA Rail
Bruno Cacciola, VIA Rail
Arnaud Lacaze, VIA Rail
John Stolz, LIRR
Frank Maldari, LIRR
Jean-Phillipe Quintal, VIA Rail
Melissa Shurland, FRA
Ed Engle, Iowa DOT
Benjamin Goldman, CRS
Kyle Otte - Amtrak
Adam Otsuka – Amtrak
Kristine Severson, Volpe
Devon Parsons, Amtrak
Dean Del Peschio, Maryland Transit Admn

Charlie King – FRA
Gary Fairbanks, FRA
Tara Soesbee – Amtrak
Ran Barton – Amtrak

Andrea Farmer, Maryland Transit Admn.

Industry Participants:

Steve Morrison – Siemens
Rich Bowie – Alstom
Joe Quigley – Alstom
Lorenzo Reffreger – Wabtec
Darrell Smith, Metro DC
James Michel
Steven Ojalvo – Televic
Tom LaMano, Cummins
Miranda Cross – Cummins
Dick Bruss - Retired
Joe Kenas – Alstom
Martin Schroeder – Jacobs
Bill Umbenhaur- Traction Systems
Marcin Taraszewicz PE - HDR, Inc
James Coston-Corridor Rail Development
Kevin B. Myles, WMATA
Brian Ley, Wago Corp.
Terry Soesbee, Railway Products Corp.
Erich Kolig, Railway Products Corp.
Frank Pascazio, Amsted Rail
Rodney McGhee, Amsted Rail
Kaushik. B. Nagendron – Cummins
Ray Ginnell, Siemens Mobility
Martin Ritter - Stadler

Kevin Sudano – KPS Transit
Jack Madden – Erdmann-Anthony
Kevin Brubaker - ELPC
Walt Stringer – SBC Global
Paul Jamieson – Retired PE
Jon Mullin – Omni-Strategy
Gary Wagner – Almstead Rail/Transit
Fabio Cussigh – VDS Rail
Bill Luebke – Kiel Americas
Michael Colella - Steer
Richard Curtis – Curtis Engineering
Josh Coran - Talgo
Mike Monaco - TPSC
Robert Magdule - Hoppecke
Michael Ramos, Timken
Joe Moore, Smith Systems
Dave Fox, ACS Railroad Solutions
Ken Martin, Sharma, and Associates
Mario Bergeron
Craig McKeen – Progress Rail
Herbert Buchholtz - Tylin
Whitney Faughty – Cummins
Jonathan Veitcht – Talgo
Ed Golitko, Corridor Rail Development
Armin Kick – Siemens
Malte Schierwater, Siemens Mobility, Inc