



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

Section 305 Next Generation Corridor Equipment Pool Committee (NGEC)

Monthly Activities Report: August 31, 2022

Submitted By: Steven J Hewitt, Program Manager, S305 NGEC

Public law 110-432 required Amtrak to:

...establish a Next Generation Corridor Equipment Pool Committee, comprised of representatives of Amtrak, the Federal Railroad Administration, host freight railroad companies, passenger railroad equipment manufacturers, interested States, and as appropriate, other passenger railroad operators.

"The purpose of the Committee shall be to design, develop specifications for, and procure standardized next-generation corridor equipment.

(b) Functions – the Committee may –

- 1) Determine the number of different types of equipment required, considering variations in operational needs and corridor infrastructure.*
- 2) Establish a pool of equipment to be used on corridor routes funded by participating states; and*
- 3) Subject agreements between Amtrak and States, utilize services provided by Amtrak to design, maintain and remanufacture equipment."*

Executive Board

Chair: Ray Hessinger, NYSDOT

Vice Chair: George Hull, Amtrak

Secretary: John Oimoen, IDOT

Treasurer: Tim Ziethen, Amtrak

The Executive Board holds bi-weekly conference calls – Tuesdays at 11:30am Eastern

During the month of August 2022, the Executive Board met twice – on the 9th and the 23rd.

Highlights, decisions, and action items from the month of August 2022 include:

- Treasurer's Report and Finance and Administrative Sub-committee as of 8-31-22:

Balance/ Spend Rate:

- Total Initial Grant Amount: \$1,250,000.
- Expenses Incurred through June 2022: \$1,017,901.39
- Balance remaining: \$ 232,098.61
- Current Spend Rate per month (as info and used in calculating): \$14,752.19
- Estimated Balance at the end of the Extension Period (Contingency): \$10,815.70

- Status – Website Refresh

iEngineering Corp. was selected as the vendor for the refresh of the NGEC website.

A kick-off meeting with iEngineering took place on 8-23-22. Participants included Steve Hewitt and Ray Hessinger as well as the AASHTO team of Shayne Gill, Strat Cavros, Rebecca Anger and David Dubov and representatives of iEngineering.

iEngineering was given the points of contact (me for the NGEC) and others from AASHTO and have proceeded with their effort. All documents that we post will continue to be posted and those that are on the site currently will remain available. The intent is that the overall organization of the site be improved and navigation made more user friendly. We are excited about this refresh and believe it will help raise visibility for the NGEC if it is attractive to more users.

The website will have its own domain name and will no longer be a part of the AASHTO web domain. This will make it easier to find the NGEC site.

- Status – Seeking new funding for the NGEC:

With Amtrak as the grantee of NGEC funds, it is to be the applicant for a CRISI Grant requesting additional funding for the NGEC. The NGEC has operated for nearly 13 years with a total of \$4 million being appropriated. Although the NGEC – or groups associated with the NGEC - have requested additional funding throughout the years, we have never received a reauthorization or new funding.

After repeated attempts to find options for funding the NGEC beyond the current grant agreement which ends on 9-30-2023, it was decided that applying for a CRISI grant while still looking to Amtrak or FRA for other options was the way to go.

NGEC Treasurer, Tim Ziethen, Amtrak, has prepared an application and it is with the Amtrak committee under review.

Assuming it is submitted, the NGEC cannot advocate for itself, but industry members can as an individual states. Letters in support will be critical to the success of the application. Steve Hewitt will provide status updates as to if and when the application is submitted to FRA.

- 2022 NGEC two-pager:

The 2022 NGEC two-page educational document was released in January 2022. To date 581 copies have been distributed.

The FASC has begun the process of updating the two-pager for its 2-23 version. Missouri DOT has, once again, agreed to provide the graphic arts service to format the 2-23 version and to print the hard copies,

- Annual By-Law Review/Update:

Second FASC Vice Chair John Oimoen, IDOT, and Steve Hewitt presented a couple of recommended changes to the FASC on 8-17-22. They are related to permissible activities of the Committee.

FASC members were asked to review the proposed language between now and September's FASC call, and Tim plans to talk to Amtrak legal to potentially add language regarding permissible (or not) expenditures from grant funds or from outside sources related to members attending trade shows etc.

Steve Hewitt was asked to talk to Chairman Ray Hessinger about the By-Laws discussion and also about a request from FRA to make more liberal use of the electronic voting procedures.

Ray acknowledged that discussion and noted that anytime that it made sense to do so, the electronic vote procedure would be used and noted that it was most recently used for approval of the website refresh proposal from iEngineering.

- Multi-State Rail Car Procurement (provided by Caltrans) as of 8-31-22:

The Cab Car shell final design has been approved and the cab cars are in production. Remaining Cab Car FDRs are in the final submittal and review stage. Cab Car Safety Appliance documents have been sent to the FRA for review, and the Cab Car Clearance information has been approved by Amtrak. IDOT Café Car system level FDR reviews are nearly complete.

The Cab Car Collision and Corner Post Appendix F testing is complete, and the Rev B test report has been approved. The second revision of the Cab Car FMECA has been approved. The Sample Car Inspection for cab car is tentative for early 2023.

116 cars are in production or have been produced at Siemens Sacramento Facility. Revenue Service relevant FMIs are in progress and open items related to Conditional Acceptance are being addressed. IDOT coaches are currently in revenue service and Caltrans is planning revenue start once necessary agreements are in place.

- Metro-North Dual Mode Locomotive Equipment as of 8-31-22:

The first session meetings were held in Sacramento, Ca. and in Germany.

Siemens is updating documents based on Metro-North comments.

Metro-North reviewed mock-ups of 2 items: cab control and the emergency exit in the front of the cab.

- Amtrak Equipment Procurement Update – as of 8-31-22:

On the Acela:

They have received Trainset 4 and the next one is expected mid-month (September).

They are continuing to go through the qualification process and preparing to submit to FRA.

On the Charger Locomotives:

Progress continues with 12 of 15 delivered and commissioned into service.

On the Intercity Trainset (ICT):

They are close to done with Intermediate Design Review and are moving on to FDR.

On the GP38 Locomotive – Non-revenue locomotives:

The first one was arriving at the shop on 9-1-22 and the second will arrive shortly.

- Connecticut DOT Rail Car Procurement as of 8-31-22:

As of 8-18-22, CtDOT reported that 137 questions had been received and responses to those questions were set to go out on 9-19-22.

- VIA Rail Equipment Procurements:

On 2-25-22 at the Annual Meeting a comprehensive overview/update of the VIA Rail procurement was presented. The presentation has been posted to the NGENC website and distributed to all NGENC members.

- Document Control Progress Report – 8-31-22:

The Document Control Manager, Tammy Krause, has received 173 document change requests for the Bi-level specification. There will be no additional DCRs received. Any new ones will be reviewed for the following revision of the specification. I am currently dividing up the DCRs to send to the appropriate Working Groups. She is working on them, and planned to get them out in the first week of September 2022.

Tammy continues to meet regularly with the Technical Writer about document control. The focus is on the bi-level and proposed changes.

The Materials Working Group has been organized and has several meetings and is focused on Chapter 4.

A Communications Working Group has been formed from the Electronics on Trains Working Group. The focus will be on-car communications.

The sunseting of the Digital Hardware Specification and stopping work on the Software specification was approved by the Executive Board on 8-23-22.

- NGEC 2023 Annual Meeting:

The 2023 NGEC Annual Meeting will be held a bit earlier than in past years. This year it will be held on February 3rd. The location is, once again, the Hyatt Regency Capitol Hill, Washington, DC Capitol Room B. The time for the meeting will likely be the same as last year (8:00am Registration – Meeting 8:30am – Noon Eastern.

Status of 2022 Priorities as of 8-31-22:

Priority Area: Review/Update the Bi-level specification currently in Revision C.4. With Amtrak looking at using some of the funding from the new IIJA for its western fleet, it makes sense for the NGEC to review and update the Bi-Level car specification.

Action as of 8-31-22: Bi-Level Car Specification Review/Update is underway. A new DCR form has been adopted and is now being used. As of 8-31-22, 173 DCRs have been received and the process of working group's review has begun. .

Priority Area: Review the car body materials issue from a broader perspective for all NGEC equipment not only DMUs. Ray would like to take a look at developing a consistent approach for all of the NGEC vehicle specifications.

Action as of 8-31-22: The Carbody Materials Working Group has met several times and is working on Chapter 4 – Carbody, of the Single Level Specification.

Priority Area: Review “emerging technologies”: On the technical subcommittee call of 12-9-21 the topic of emerging technologies for propulsion was raised. Ray Hessinger believed that the technical subcommittee should conduct a scan of the industry regarding emerging technologies for propulsion and how they relate to the NGEC.

Action as of 8-31-22 Dave Warner initially gave a zero emissions presentation during the Annual Meeting and followed that up with a presentation to the Executive Board on APTA's effort to develop Alternate Fuel Safety Standards

Priority Area: Review and consider using the Metro-North Dual Mode Locomotive Specification organizational changes to determine if they should be adopted by the NGEC and applied across the board to all NGEC specifications. This would be an administrative change not impacting technical content of any of the specifications and could be resolved by the Executive Board.

Action as of 8-31-22 -This is included in the DCM action Plan and will likely follow the Bi-Level Car Specification update or may begin simultaneously with making updates to that spec.

Priority Area: Review/update NGEC Reference and Drawings series 305-900 and 305-800.

Action as of 8-31-22: This item is on the DCM action plan for 2022 – no activity on reviewing the reference documents per se, but Tammy Krause, Document Control Manager will be working with Jeff Gordon to create a new reference specification to address the Volpe Center information on CEM.

Technical subcommittee

Chair: George Hull, Amtrak

Vice Chair: Joe Paul, Amtrak

The Technical subcommittee holds bi-weekly conference calls on Thursdays at 3:00pm Eastern

During the month of August 2022, the NGEC Technical Subcommittee met twice – on the 4th and the 18th.

Key decisions and action item updates from the month of August 2022, included:

- Backgrounder educational document:

The 2022 NGEC two-page educational document/handout is now available in electronic or hard copy versions. Requests should be sent to Steve Hewitt at shewitt109@aol.com

To date 581 copies have been distributed.

- Document Control Update as of 8-31-22:

See update provided in the Executive Board section of this report.

- A new Communications Working Group that has been formed from the Electronics on Trains Working Group. If anyone has an interest in joining this Working Group, please let me know. The focus will be on-car communications. The sunsetting of the Digital Hardware Specification and stopping work on the Software specification was approved by the Executive Board on 8-23-22.

- Multi-State Car Procurement - Caltrans (Lead State) update as of 8-31-22:

See the update provided in the Executive Board section of this report.

- Metro North Dual Mode Locomotive Procurement as of 8-31-22:

See the update provided in the Executive Board section of this report.

- Amtrak Equipment Procurement Updates as of 8-31-22:

See the update provided in the Executive Board section of this report.

- Connecticut DOT Rail Car Procurement as of 8-31-22:

- See the update provided in the Executive Board section of this report.

- University of Nebraska study on High Speed wireless technology as of 7-21-22:

From Hamid Sharif:

- On 7-21-22, Hamid Sharif provided the following update for inclusion in the meeting minutes:

For this project, we have been studying less utilized RF spectrum to ease the scarce RF resources issue. We selected 160 MHz since this band has been mainly used for voice applications. We designed and implemented computer models to explore the properties and capabilities of the 160 MHz RF band, and its suitability for a variety of applications.

We designed both a single-carrier transceiver architecture and an OFDM-based transceiver architecture for 160 MHz, and conducted evaluations of both designs. We also implemented and evaluated different channel models for this band.

This quarter, we designed the network layers for working with the 160MHz channel to evaluate end-to-end applications.

We are in the process of collecting computer simulation results for end-to-end applications. The plan for the next phase is to perform field tests to verify our 160 MHz model and its performance.

- Working Group on Specification Weight Issues as of 7-21-22:

The NGEC Vehicle weight Working Group had its last meeting on May 11 at 11am ET.

There were 9 members in attendance.

The group discussed ways to reconcile how P2 forces are characterized in the various NGEC specifications.

Two versions of the P2 formula are in general use. The NGEC specifications do not use a common formula, nor do they use common values for certain of the input parameters related to track stiffness and damping.

On the last call, the group requested that a sensitivity study be performed to assess the impact of these parameters on the calculated P2 forces.

This was done and we learned that some of the parameters have very little influence on the result and the parameter affecting P2 the most is the value chosen for the rail dip angle.

Additional work will be done on this, and the draft write-up being prepared by the group will be revised based on these discussions.

Members also suggested that the procedures described in the APTA Recommended Practice (RP) on Truck Design be referenced in the NGEC Specifications as it includes comprehensive guidance on how to calculate the unsprung mass term used in the equation.

The APTA RP also identifies the British Rail version of the P2 formula as the current best practice. The Working Group will recommend this version as the standard for use in the NGEC Specifications.

The next meeting of the Working Group will be during the week of June 6. A poll has been distributed to the members to assist in selecting the meeting date and time.

The scheduled Working Group meeting for 6-9-22 was canceled due to a schedule conflict. Jeff Gordon is looking at dates for the next meeting.

The next meeting is expected to take place the first or second week of August.

If interested in participating on this working group, contact Jeff Gordon at Jeffrey.gordon@dot.gov or Steve Hewitt at shewitt109@aol.com

The Finance and Administrative Subcommittee

Chair: Tim Ziethen, Amtrak

Vice Chair: Brian Beeler II, NNEPRA for Maine DOT

Second Vice Chair: John Oimoen, Illinois DOT

The Finance and Administrative subcommittee (FASC) will hold a conference call every four weeks on Wednesdays at 3:00pm Eastern.

During the Month of August 2022, the Finance and Administrative Subcommittee met on the 20th

Key decisions and action item updates from the month of July 2022, included:

- Treasurer's Report and Finance and Administrative Sub-committee:

Balance/ Spend Rate:

Total Initial Grant Amount: \$1,250,000.

Expenses Incurred through June 2022: \$1,017,901.39

Balance remaining: \$ 232,098.61

Current Spend Rate per month (as info and used in calculating): \$14,752.19

Estimated Balance at the end of the Extension Period (Contingency): \$10,815.70

- Exploring Funding Options

See update provided in the Executive Board section of this activities report.

- Conveying the message as of 8-31-22:

The 2022 NGEC two-pager is available as reported in the Executive Board section of this report and 455 electronic or "soft" copies have been distributed. 126 hard copies have also been distributed.

Along with the two-pager, the website refresh will look at ways to increase NGEC visibility. Details on the status of the website refresh can be found in the Executive Board section of this month's report.

- Quarterly Grant Agreement Progress Report to FRA

All reports this year have been submitted on time. The report for the period ending 6-30-22 was submitted to FRA by 7-29-22.

The next report will be due to FRA by 11-30-22.

- By-laws changes to allow activities that will increase public awareness:

See the Executive Board section of this month's report for details on the By-Laws update.

NGEC Specification Review Panel(s):

For each PRIIA NGEC specification a Review Panel has been established to compare the specification (as developed by the technical subcommittee) against a Requirements document previously adopted by the Executive Board. As the Review Panel completes its work, it prepares a report with recommendations. This report is submitted to the Executive Board for its consideration. Once accepted by the Board, the specification is subsequently formally adopted by the Executive Board. As part of the Document Control process, any proposed revisions to a PRIIA NGEC specification must go through the Review Panel process as well. At such times, the Review Panel, previously established for a specification, is re-convened by the Executive Board chair.

NGEC Specification Review Panels did not meet during the month of August 2022.