

# Amtrak and the RCS

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# National Railroad Passenger Corporation (NRPC)

- Amtrak was created by Congress in 1970 serve as the 'National Provider' (USA) of intercity passenger rail
- Rail network serves 500+ destinations in 46 states, 21,000 miles of routes, with nearly 18,000 employees
- **Equipment:**
  - 1479 Amfleet, Superliner, Viewliner and other railroad passenger cars
  - 341 locomotives
  - 80 Auto Train vehicle carriers
  - 25 Acela Train sets
- **28 million passengers, \$2.4 Billion Revenue**
- **Internet Sales (Amtrak.com) represent ~50% of ticket sales (\$1.0+ billion)**
- **Services booked: Seats, Sleepers, Auto Transport**

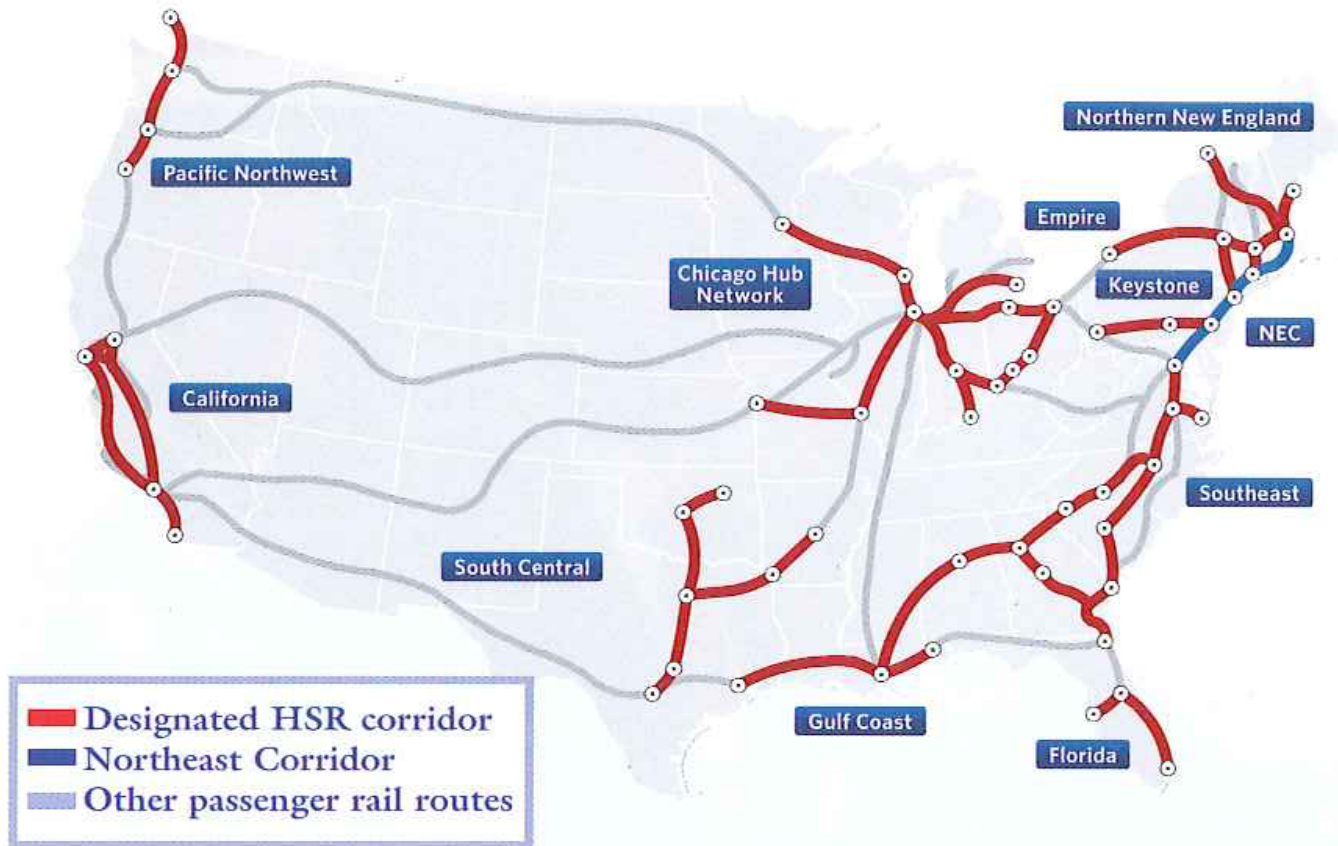
*Source: Amtrak 2008 Annual Report*

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# Where is Passenger Rail Headed?

## VISION *for* HIGH-SPEED RAIL *in* AMERICA



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# Res-NG and the RCS

- Amtrak is in the middle of a large reservation system modernization effort, Res-NG
  - Adding multi-host support
  - Modernizing distribution channels and revenue controls
  - Moving to a Service Oriented Architecture
- This addresses a lot of issues but not a core problem of the long term maintenance of the reservation system code base
  - Arrow is based on the Braniff “Cowboy” system (PARS) meaning some code is 40+ years old
  - A high level of skill is required to maintain this and the mean age of the available workforce is near retirement
    - Larger shops can deal with this issue as they can spread critical skills over a larger staff, if Amtrak just loses one programmer, there is a noticeable resulting skill gap
  - No vendor markets a suitable complete replacement and it is too expensive and high risk to write again from scratch
    - Nothing works like Arrow and would need a high degree of customization so as not to impact critical business functions

# Res-NG and the RCS

- The solution Amtrak has chosen is to separate out the reservation functions that a vendor could supply from the business logic that is unique to Amtrak
- There is a core set of reservation functions very common across the industry which should be available as a commodity from several vendors
  - These functions may be based on legacy code, that is an issue for the vendor to deal with but several have to scale to continue to work with PARS based systems
- Amtrak is working with the OTA to define the Rail Common Services (RCS) in order to make it more attractive to the large industry players to participate
  - As an OTA standard. it would not be Amtrak unique, there would be a larger market
  - As an OTA standard, any offering would not be unique to a vendor
  - Offerings could be based on a hosting model or standalone copies run as a service offering
  - For rail operators who wish to start anew, vendors may also offer business logic plug ins for a complete solution
  - Vendors who do not offer an RCS may still offer plug ins based on the standard
    - There are many great functions on the market that are not used due to the high degree of customization required to adopt to the back end res system
- Amtrak is balancing it's approach to the RCS to meet Amtrak's need and to also be a reasonable vendor work effort for the well known industry players
  - When ever possible we are sticking to widely used industry structures and work flows

# RCS Definition

- More than a service model definition
- Service model intended to cover the commonly used transactional reservation functions
  - Highest level of reuse amongst various distribution channels for making bookings
- There are many other specialty and control functions with a very small user community
  - Inventory and revenue control functions (such as to shut down booking classes)
  - Help desk functions or group handling
  - These may still be request/reply commands
- The overall RCS definition will resemble an RFP
  - The service model specification which must be adhered to
  - Business events that must be exposed
  - Other functionality that must be provided but how these functions are used is less strict
    - For example the ability to shut down a booking class but how that is done varies across providers
    - How data such as schedules and fares may vary or how data is logged and passed to financial systems the rail operator uses

# Amtrak Example

- RCS is common and multi host enabled
  - Several rail operators may share the same RCS
- Amtrak business logic is in the Amtrak Reservation Web Services domain
  - Other rail operators may use Amtrak channel common functions if it meets their needs
- Other rail operators may have their own channel common business logic layer
- Each operator would have their own channels
  - Some operators may choose to use some or all of Amtrak's channels

