



PTC Radio Hardware and IP Licensing Review

American Railway Engineering and Maintenance-of-Way Association (AREMA)
2012 Annual Conference and Exposition
September 16, 2012

Presented by Rick Davis, CFO, Meteorcomm LLC



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Document Number: 00002385-A

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Background

- In 2010, the four largest U.S. RRs acquired MCC and its existing Intellectual Property (IP) to develop PTC communications hardware (HW) and software.
- MCC's net investment in PTC radio and messaging and IP could reach \$250MM by the end of 2015:
 - Net of \$21MM FRA grant.
 - Through 2012: \$175MM.
 - Average 2013-2015: \$20MM - \$30MM/year.

Background

- MCC will provide railroads with:
 - Radio Hardware.
 - Radio Licenses (to cover radio design, firmware and software development).
 - Messaging (and related software) Licenses.
 - Fee-based professional services and extra training.
- Radio hardware can be purchased from MCC and other independent manufacturer(s).

Principles

- Charges are determined to result in each railroad paying its pro-rata share of MCC's total net PTC development costs.
- Individual unit charges have been designed:
 - So radio license and messaging license charges recover their respective development costs.
 - To result in the same economic cost between earlier and later deployments.
- MCC's costs to supply (and support the supply of) Radio HW will be recovered in Radio HW pricing, targeting full recovery by the end of 2015.
 - Radio HW pricing does not include Radio IP, shipping, insurance, and taxes.

Principles

- MCC's Radio HW, Radio IP and Messaging IP charges will be the same for each RR regardless of size:
 - Exceptions would be for additional services or preferential order processing.
 - MCC may adjust minimum charges for very small operators.
 - Other Radio HW suppliers are entitled to determine their own prices and sales terms.
 - The resulting cost for Radio IP and Messaging IP will be the same for every PTC participant, including MCC's four owners.
- Cost allocations for Radio IP and Messaging IP are structured to economically equalize early and late adopters:
 - Charges will escalate based on Cost of Capital at 12%.

Principles

- MCC is offering fee-based Training and Professional Services at market rates.
- In total, each RR will contribute its pro rata share of MCC's development costs regardless of MCC ownership structure, RR scale and their timing of implementation.
- MCC will strive to limit the frequency of changes in Radio HW pricing, and to annually adjust each year's Radio IP and Messaging IP charges to support RR budget planning.

Allocations - Radio HW Pricing

- RRs may purchase radios from MCC or any MCC-supported manufacturer.
- Radio HW distributed by MCC will be priced to recover its manufacturing support costs by the end of 2015.
- Other Radio HW manufacturers are charged a fee to cover MCC's support.
- Radio IP Licenses must be purchased prior to or concurrently with Radio HW shipments.

Allocations - Radio IP and Messaging IP

- MCC will recover its Radio IP, Messaging IP costs through charges for initial Licenses and required Annual Fees per License.
- License charges will escalate to cover MCC's Cost of Capital and IP improvements covered by Annual Fees:
 - Radio and Messaging IP License charges are established for transactions through 2013 and set to recover MCC's related net costs through 2012 and the Annual Fee equivalent for 2013.
 - Anticipated License charge rates are established through 2015.
 - May be adjusted if cost and deployment experience varies substantially from expectations.

Allocations - Radio IP and Messaging IP

- Annual Fee amounts will be determined based on MCC's actual annual costs and revised outlooks for total industry volumes:
 - Used to “true up” prior charges to result in every RR paying the same regardless of timing.
- Payment of Annual Fee is required until related asset is retired:
 - Retired usually means related HW device has been destroyed.
 - Licenses may be transferred for loading on replacement devices.
 - Reactivation of a license requires retroactive payment of skipped Annual Fees.

Approach - IP License Fee

- A Radio IP License must be acquired upon shipment of Radio HW:
 - Other manufacturers will be able to present required agreements and to collect Radio IP License charges.
- License Fees will apply to all shipped/delivered units, including spares.
- For “remotes,” message areas will be based on the number of WIUs and the number of locomotives:
 - For railroads that have an architecture or design that is different from the above assumption, their configuration will be converted to fit the above assumption for pricing and purchasing purposes.

Approach – Annual Fee

- Beginning in 2013, for each System Component, MCC will charge an Annual Fee based on each year's on-going costs of product development, support, and maintenance for the ITC Communication System
 - “True-ups” from previous years for both IP License and Annual Fees will also be included.
- ITC Communication System costs included in the Annual Fee are each year's:
 - MCC's PTC-related costs.
 - Third-Party License, Subscriptions and Support Fees.
 - The time value of invested funds recognizing commercial, technical and regulatory risks.

Approach – Annual Fee

- Annual Fees are due with purchase of components and then annually.
- There is no 2012 Annual Fee; the 2013 Annual Fee will be invoiced with the 2012 and 2013 Initial IP License Fees.
- Within a given year, there is no pro-rating of Annual Fees.

Approach – Annual Fee

- For purchases made after 2012, the first Annual Fee will be retroactive to include 2013
- Annual Fees will be established and published in Q3 of each calendar year; invoicing will be in Q4 with a due date of about November 30.
 - Prices published with this update go into effect immediately and will be effective through December 31, 2013. The next update will be published in September, 2013, with a January 1, 2014 effective date.
- Annual Fees beyond 2013 are estimates.

Total Unit Volumes

ITC System Component	Total
Wayside 220 MHZ Radios	21,960
Wayside Message Areas	26,250
Locomotive 220 MHZ Radios	19,720
Locomotive Message Areas	19,720
Base Station 220 MHZ Radios	4,200
Back Office Servers	785

Initial IP License Fees (\$)

ITC System Component	2012	2013	2014	2015
Wayside 220 MHZ Radios	\$544	\$609	\$682	\$764
Wayside Message Areas	\$595	\$666	\$746	\$836
Locomotive 220 MHZ Radios	\$2,720	\$3,046	\$3,412	\$3,821
Locomotive Message Areas	\$2,974	\$3,331	\$3,731	\$4,178
Base Station 220 MHZ Radios	\$4,896	\$5,483	\$6,141	\$6,878
Back Office Servers *	\$29,741	\$33,310	\$37,307	\$41,784
* Minimum purchase of 12 B/O Servers (Minimum Configuration)	\$356,892	\$399,717	\$447,684	\$501,408

Annual Fees (1)

ITC System Component	2012	2013	2014	2015
Wayside Radio License - Renewal	N/A	\$88	\$82	\$69
Wayside Radio License - New Purchase	N/A	\$88	\$181	\$272
Wayside Message Area (ITCM) - Renewal	N/A	\$136	\$130	\$112
Wayside Message Area (ITCM) - New Purchase	N/A	\$136	\$282	\$428
Locomotive Radio License - Renewal	N/A	\$442	\$410	\$347
Locomotive Radio License - New Purchase	N/A	\$442	\$906	\$1,362
Locomotive Message Area (ITCM) - Renewal	N/A	\$681	\$650	\$559
Locomotive Message Area (ITCM) - New Purchase	N/A	\$681	\$1,412	\$2,141
Base Station Radio License - Renewal	N/A	\$796	\$739	\$625
Base Station Radio License - New Purchase	N/A	\$796	\$1,630	\$2,451
Back Office Servers * - Renewal	N/A	\$6,806	\$6,501	\$5,587
Back Office Servers * - New Purchase	N/A	\$6,806	\$14,124	\$21,406
* Minimum Annual Fee for 12 B/O Server Licenses				

(1) Fees will be updated or revised annually.

Questions?