

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

SCHEDULE TO

**TENDER OFFER STATEMENT UNDER SECTION 14(d)(1) OR 13(e)(1) OF THE
SECURITIES EXCHANGE ACT OF 1934
(Amendment No. 5)**

Applied Signal Technology, Inc.

(Name of Subject Company)

RN Acquisition Company

(Offeror)

a wholly owned subsidiary of

Raytheon Company

(Parent of Offeror)

COMMON STOCK, WITHOUT PAR VALUE

(Title of Class of Securities)

038237103

(CUSIP Number of Class of Securities)

Jay B. Stephens, Esq.

Raytheon Company

870 Winter Street

Waltham, MA 02451

(781) 522-3000

(Name, address, and telephone numbers of person authorized to receive notices and communications on behalf of filing persons)

Copies to:

Gary E. Thompson, Esq.

Hunton & Williams LLP

951 E. Byrd Street

Riverfront Plaza, East Tower

Richmond, VA 23219

(804) 788-8787

CALCULATION OF FILING FEE

Transaction Valuation(1)	Amount of Filing Fee(2)
\$559,706,712.00	\$64,981.95

- (1) Estimated for purposes of calculating the filing fee only. This amount is determined by multiplying 14,729,124 shares of Applied Signal Technology, Inc. common stock (representing the number of shares, including shares of common stock outstanding and in-the-money options) by \$38.00 per share, which is the offer price.
- (2) The filing fee was calculated in accordance with Rule 0-11 under the Securities Exchange Act of 1934 and Fee Rate Advisory #5 for fiscal year 2011, issued December 22, 2010, by multiplying the transaction value by .0001161.

Check the box if any part of the fee is offset as provided by Rule 0-11(a)(2) and identify the filing with which the offsetting fee was previously paid. Identify the previous filing by registration statement number, or the Form or Schedule and the date of its filing.

Check the box if the filing relates solely to preliminary communications made before the commencement of a tender offer.

Amount Previously Paid: \$64,981.95
Form of Registration No.: Schedule TO

Filing Party: RN Acquisition Company
Date Filed: December 30, 2010

Check the appropriate boxes below to designate any transactions to which the statement relates:

- Third-party offer subject to Rule 14d-1.
- Issuer tender offer subject to Rule 13e-4.
- Going-private transactions subject to Rule 13e-3.
- Amendment to Schedule 13D under Rule 13d-2.

Check the following box if the filing is a final amendment reporting the results of the tender offer:



This Amendment No. 5 amends and supplements the Tender Offer Statement on Schedule TO (as amended, the “Schedule TO”) relating to the offer by RN Acquisition Company, a California corporation (the “Purchaser”), and a wholly owned subsidiary of Raytheon Company, a Delaware corporation (“Parent”), to purchase all of the outstanding shares of common stock, without par value (the “Shares”), of Applied Signal Technology, Inc., a California corporation, at a purchase price of \$38.00 per Share, net to the seller in cash, without interest thereon and less any applicable withholding taxes, upon the terms and subject to the conditions set forth in the Offer to Purchase, dated December 30, 2010 (which, together with any amendments and supplements thereto, collectively constitute the “Offer to Purchase”), and in the related letter of transmittal, copies of which are attached to the Schedule TO as Exhibits (a)(1)(A) and (a)(1)(B), respectively (and which, together with the Offer to Purchase, constitute the “Offer”).

All of the information set forth in the Offer to Purchase is incorporated by reference herein in response to Items 1 through 9 and Item 11 of the Schedule TO, and is supplemented by the information specifically provided for in this Amendment No. 5. Capitalized terms used but not otherwise defined herein have the meanings ascribed to such terms in the Schedule TO.

Item 11. Additional Information.

Item 11 of the Schedule TO, and the Offer to Purchase, to the extent incorporated by reference therein, are hereby amended and supplemented as set forth below.

The second paragraph in the subsection titled “Antitrust Compliance” in Section 16 — “Certain Legal Matters; Regulatory Approvals” of the Offer to Purchase is amended to include the following new sentence at the end of such paragraph:

“On January 28, 2011, the FTC granted early termination of the waiting period under the HSR Act applicable to the Offer.”

SIGNATURE

After due inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

RN Acquisition Company

By: /s/ Kathryn Gilchrist Simpson

Name: Kathryn Gilchrist Simpson

Title: President

Dated: January 28, 2011

Raytheon Company

By: /s/ Jay B. Stephens

Name: Jay B. Stephens

Title: Senior Vice President, General Counsel and
Secretary

Dated: January 28, 2011

Exhibit Index

Exhibit No.	Description
(a)(1)(A)	Offer to Purchase, dated December 30, 2010*
(a)(1)(B)	Form of Letter of Transmittal (including Guidelines for Certification of Taxpayer Identification Number (TIN) on Substitute Form W-9)*
(a)(1)(C)	Form of Notice of Guaranteed Delivery*
(a)(1)(D)	Form of Letter to Brokers, Dealers, Commercial Banks, Trust Companies and Other Nominees*
(a)(1)(E)	Form of Letter to Clients for use by Brokers, Dealers, Commercial Banks, Trust Companies and Other Nominees*
(a)(1)(F)	Summary Advertisement as published in <i>The Wall Street Journal</i> on December 30, 2010*
(a)(1)(G)	Press Release issued by Raytheon Company, dated December 20, 2010 (incorporated by reference to Exhibit 99.1 to the Form 8-K filed by Raytheon Company with the Securities and Exchange Commission on December 20, 2010)*
(a)(1)(H)	Presentation by Raytheon Company distributed to the employees of Applied Signal Technology, Inc. on December 20, 2010 (incorporated by reference to Exhibit 99.2 to the Form 8-K filed by Raytheon Company with the Securities and Exchange Commission on December 20, 2010)*
(a)(1)(I)	Press Release issued by Raytheon Company, dated December 30, 2010, announcing the commencement of the Offer*
(a)(1)(J)	Complaint filed in the Superior Court of the State of California, County of Santa Clara, captioned <i>Jarackas v. Applied Signal Technology, Inc., et al.</i> (incorporated by reference to Exhibit (a)(14) to Amendment No. 2 to the Schedule 14D-9 filed by Applied Signal Technology, Inc. with the Securities and Exchange Commission on January 13, 2011)*
(d)(1)	Agreement and Plan of Merger, dated as of December 18, 2010, among Raytheon Company, RN Acquisition Company and Applied Signal Technology, Inc. (incorporated by reference to Exhibit 2.1 to the Form 8-K filed by Applied Signal Technology, Inc. with the Securities and Exchange Commission on December 20, 2010)*
(d)(2)	Tender and Voting Agreement, dated as of December 18, 2010, by and among Raytheon Company, RN Acquisition Company and Milton E. Cooper*
(d)(3)	Tender and Voting Agreement, dated as of December 18, 2010, by and among Raytheon Company, RN Acquisition Company and John P. Devine*
(d)(4)	Tender and Voting Agreement, dated as of December 18, 2010, by and among Raytheon Company, RN Acquisition Company and David D. Elliman (and certain affiliates)*
(d)(5)	Tender and Voting Agreement, dated as of December 18, 2010, by and among Raytheon Company, RN Acquisition Company and Marie S. Minton*
(d)(6)	Tender and Voting Agreement, dated as of December 18, 2010, by and among Raytheon Company, RN Acquisition Company and Robert J. Richardson*
(d)(7)	Tender and Voting Agreement, dated as of December 18, 2010, by and among Raytheon Company, RN Acquisition Company and Dr. John Treichler (and certain affiliates)*
(d)(8)	Tender and Voting Agreement, dated as of December 18, 2010, by and among Raytheon Company, RN Acquisition Company and William B. Van Vleet III*
(d)(9)	Mutual Nondisclosure Agreement, dated as of October 19, 2010, between Applied Signal Technology, Inc. and Raytheon Company*

* Previously filed.