

COMBAT RATION NETWORK FOR TECHNOLOGY IMPLEMENTATION

Final Technical Report

CORANET Demonstration Site

Results and Accomplishments (March 2002 – June 2009)

Report No: FTR 214

CDRL Sequence: A003

January 2010

CORANET CONTRACT NO. SPO103-02-D-0024

Sponsored by:
DEFENSE LOGISTICS AGENCY
8725 John J. Kingman Rd.
Fort Belvoir, VA 22060-6221

Contractor:
THE CENTER FOR ADVANCED FOOD TECHNOLOGY
The School of Environmental and Biological Science
Rutgers, The State University of New Jersey
New Brunswick, New Jersey 08903

Principal Investigator:
Henderikus B Bruins

TEL: 732-445-6130
FAX: 732-445-6145

REPORT DOCUMENTATION PAGE					Form Approved OMB No. 0704-0188	
<p>The public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.</p> <p>PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.</p>						
1. REPORT DATE (DD-MM-YYYY) January 2010		2. REPORT TYPE Final		3. DATES COVERED (From - To) December 2001 - June 2009		
4. TITLE AND SUBTITLE CORANET Demonstration Site				5a. CONTRACT NUMBER SP0103-02-D-0024 / 0001		
				5b. GRANT NUMBER		
				5c. PROGRAM ELEMENT NUMBER		
6. AUTHOR(S) Mr. Henderikus B. Bruins				5d. PROJECT NUMBER		
				5e. TASK NUMBER		
				5f. WORK UNIT NUMBER A003		
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Rutgers, The State University of New Jersey The Center for Advanced Food Technology School of Environmental and Biological Sciences New Brunswick, NJ 08903				8. PERFORMING ORGANIZATION REPORT NUMBER FTR 214		
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) Defense Logistics Agency 8725 John J. Kingsman Rd Fort Belvoir, VA 22060-6221				10. SPONSOR/MONITOR'S ACRONYM(S)		
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)		
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution is unlimited.						
13. SUPPLEMENTARY NOTES						
14. ABSTRACT DLA's CORANET II ManTech program supported a Demonstration Site for Combat Ration Manufacturing in which advanced technology could be developed, tested and demonstrated. The Demonstration site was maintained and operated by the Center of Advanced Food Technology of Rutgers University at a 3100 sqft, USDA/FSIS and FDA, approved food manufacturing and canning facility. Numerous short term projects made use of this facility to demonstrate product and process improvements and the staff of the facility was frequently used for training and technology assessments. The Demonstration Site also maintained an information database to disseminate research and development, science and engineering technology through technical reports and working papers that were made available via the web.						
15. SUBJECT TERMS Ration, MRE, UGR, Retort, Demonstration, Technology Transfer						
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Unclassified	18. NUMBER OF PAGES 22	19a. NAME OF RESPONSIBLE PERSON Henderikus B. Bruins	
a. REPORT Unclassified	b. ABSTRACT Unclassified	c. THIS PAGE Unclassified			19b. TELEPHONE NUMBER (Include area code) 732-445-6130	

Abstract:

DLA's CORANET II ManTech program supported a Demonstration Site for Combat Ration Manufacturing in which advanced technology could be developed, tested and demonstrated. The Demonstration site was maintained and operated by the Center of Advanced Food Technology of Rutgers University at a 3100 sqft, USDA/FSIS and FDA, approved food manufacturing and canning facility. Numerous short term projects made use of this facility to demonstrate product and process improvements and the staff of the facility was frequently used for training and technology assessments. The Demonstration Site also maintained an information database to disseminate research and development, science and engineering technology through technical reports and working papers that were made available via the web.

Index

1	Results and Accomplishments.....	5
1.1	Introduction and Background.....	5
1.2	Objectives.....	5
1.3	Results and Conclusions	6
2	Program Management	6
3	Short Term Project Activities	7
3.1	Demonstration Facility.....	7
3.1.1	Plant Layout.....	7
3.1.2	Equipment.....	7
3.1.3	Technology Demonstration	12
3.1.4	Ration Producer Assist	13
3.1.5	Equipment Disposition	13
3.1.6	Conferences, Briefings and Meetings	17
3.2	Short Term Projects (STP's)	17
3.2.1	Approved Projects:	18
3.2.2	Phase 0 Proposals	17
3.3	Non Traditional Capital Investment Criteria (NCIC).....	19
3.4	Packaged Food Manufacturing Information Services (PFMIS)	19
4	Appendix	20

1 Results and Accomplishments

1.1 Introduction and Background

CAFT has operated since 1993 the Combat Ration Manufacturing Demonstration Site at its Food Manufacturing Technology (FMT) facility at 120 New England Avenue, Piscataway NJ. This 31,000 square foot facility is an approved USDA/FSIS and FDA food manufacturing and canning facility. While initially designed for exclusive use by the combat ration program (CRAMTD program), in the succeeding program, CORANET (1997-2001), the demonstration site was operated under a cost share agreement, reducing DLA's cost share to 63% to encourage the use of the facility by other entities.

Under the CORANET II program, CAFT continued the operation of the FMT facility and was awarded by DLA a contract to continue to operate the Combat Ration Demonstration Site out of this facility under an agreement that reduced DLA's cost share to 45%. The FMT facility is operated by personnel that are experienced in food manufacturing and product and process development and have excellent relationship with the food industry. This expertise enabled CAFT cost share the operational cost of the facility by attracting various companies to either develop new products and/or processes or produce food products.

This contract provided support and technology transfer assistance to the Defense Logistics Agency's CORANET program in Combat Rations by the staff members of the Food Manufacturing Technology Facility. The staff members have significant amount of "know-how" in the area of combat ration manufacturing and assembly based on work that has been performed in the past under the DLA ManTech program. Often short term projects end at the R&D phase and implementation and testing of the newly developed principles at one of the ration producers can not be conducted due to time and cost constraints. The CORANET Demonstration site eliminated this by making the facility and resources available to the short term projects and provide a road to testing the principles at a commercial scale.

1.2 Objectives

- Operate and maintain a demonstration site that has been configured as a "Food Manufacturing Technology Facility", equipped with advanced hardware, software and management systems. The site will be accessible to food manufacturers, researchers and equipment and systems vendors who can use it to learn about the capabilities and limitations of advanced technology, solve their own manufacturing problems, experiment with new methods, train personnel and actually manufacture test batches of combat rations. New opportunities to develop advanced technology and needs to solve problems of special interest will be addressed by conducting short-term research and development projects (STP's).
- Assist the researchers in the introduction and implementation of technologies that result from the Short Term projects and conduct formal demonstration cycles of these newly developed technologies
- Promote the use of Non Traditional Capital Investment Criteria (NCIC) in projects where traditional cost benefit analysis might fall short because it can not quantify certain intangible benefits of the new technology
- Operate and maintain a Packaged Food Manufacturing Information Service (PFMIS), specifically focuses on the combat ration manufacturing industry, in which technical reports are archived and made available.

1.3 Results and Conclusions

FMTF Staff members have interacted with the Government, Industry and Academic Partners in and beyond the CORANET II program and maintained a high level of cooperation and rapport. They are seen as expert engineering resources that have extensive “know-how” in the manufacturing and assembly of rations. Assistance ranged from technology transfer of new developed processes under short term projects, upgrading existing systems, improving manufacturability, analyzing production systems, optimizing processes, reviewing new technology and maintaining an information database system for technology transfer. The FMT staff attended a total of 22 workshop meetings. At these meetings or as a follow up to these meetings, they proposed more than 40 projects during the seven years of the program. Of these proposed projects, a total of 17 projects were eventually selected by the Government for funding. While it can not be expected that all Research projects lead to meeting the cost benefit criteria, the projects executed at the FMT facility overall have resulted in significant cost savings to the Ration Industry. Final Reports for each of these project have or will be submitted. It should be recognized that most of this work would not have been possible without the FMT/Demo facility.

2 Program Management

The contract was awarded on December 1, 2001, under SPO103-02-D-0024, delivery order 0001, with a total value of \$1,120,400, but with an initial obligation of \$110,000. Performance period for this delivery order was initially set at 24 months through November 30, 2003 with five option years..

The main objective of the project was to maintain and operate a food manufacturing demonstration site and assist in the development and implementation of new manufacturing techniques that could either improve the quality of the ration, reduce the cost of the ration or improve the capacity of the combat ration industry to respond to surge needs.

The following contract modifications were issued:

- 0001/01 2/11/02 Incremental funding is provided in the amount of \$350,000 thereby increasing the total obligation from \$110,000.00 to \$460,000.00
- 0001/02 6/27/02 Incremental funding is provided in the amount of \$405,463.85 thereby increasing the total obligation from \$460,000.00 to \$865,463.85
- 0001/03
- 0001/04 7/19/02 This mod is to decrease funding for the demonstration site in the amount of \$143,834.00 and therefore decreasing the total obligation from \$865,463.85 to \$721,629.85
- 0001/05 8/30/02 This mod is to decrease funding for the demonstration site in the amount of \$128,400.00 and therefore decreasing the total obligation from \$721,629.85 to \$593,229.85
- 0001/06 11/27/02 This mod is to increase funding for the demonstration site in the amount of \$100,000.00 and therefore increasing the total obligation from \$593,229.85 to \$693,229.85
- 0001/07 1/6/03 Modification of the accounting data
- 0001/08 1/10/03 This mod is to increase funding for the demonstration site in the amount of \$427,170.15 and therefore increasing the total obligation from \$693,229.85 to \$1,120,400
- 0001/09 11/26/03 Invoked option year #1. CORANET Demonstration Site is extended through 11/30/04
- 0001/10 1/12/04 Additional funds were added increasing the total obligation by \$399,510.00 from \$1,120,400.00 to 1,519,910.00, which represents a reduction in cost and activities as has been agreed upon by both parties

- 0001/11 11/29/04 Invoke option year #2. CORANET Demonstration Site is extended through 11/30/05
- 0001/12 12/21/09 Additional funds were added increasing the total obligation by \$389,647.00 from 1,519,910.00 to 1,909,557,000, which represents a reduction in cost and activities as has been agreed upon by both parties
- 0001/13 11/30/05 Invoke option year #3. CORANET Demonstration Site is extended through 11/30/06. Additional funds were added increasing the total obligation by \$200,000.00 from \$1,909,557.00 to \$2,109,557.00, which represents a reduction in cost and activities as has been agreed upon by both parties
- 0001/14 1/26/06 Additional funds were added increasing the total obligation by \$199,778.00 from \$2,109,557.00 to \$2,309,335.00
- 0001/15 11/30/06 Modification to invoke option year #4. CORANET Demonstration Site is extended through 11/30/07. Total estimated dollar value is \$419,990.00, which represents a reduction in cost and activities as has been agreed upon by both parties
- 0001/16 12/10/06 Additional funds were added increasing the total obligation by \$30,000.00 from \$2,309,335.00 to \$2,339,335.00
- 0001/17 1/29/07 Additional funds were added increasing the total obligation by \$389,990.00
- 0001/18 1/30/07 Revision of mod 0001/17: Additional funds were added increasing the total obligation by \$389,990.00 from \$2,339,335.00 to \$2,729,325.00
- 0001/19 12/15/08 Additional funds were added increasing the total obligation by \$425,844.00 from \$2,729,325.00 to \$3,155,209.00
- 0001/20 2/29/08 Modification to correct accounting and appropriation data
- 0001/21 11/25/08 No cost extension of the Demonstration Site contract until June 30, 2009
- 0001/22 6/23/09 No cost extension of the Demonstration Site task order until 30 September 2009
- 0001/23 7/15/09 Additional funds were added increasing the total obligation by \$7,072.00 from \$3,155,209.00 to \$3,162,281.00
- 0001/24 8/24/09 Additional funds were added increasing the total obligation by \$20,149.00 from \$3,162,281.00 to 3,182,430.00

3 Short Term Project Activities

3.1 *Demonstration Facility*

3.1.1 Plant Layout

The process area of the FMT Facility is laid out in three main sections to control the flow of materials in cases where the facility needs to be used for the production of combat rations. The main concern in these cases is the physical separation of raw and retorted product. A drawing depicting this layout with the location of various key pieces of equipment is included in the Appendix I.

3.1.2 Equipment

The following table shows the various pieces of equipment that were located at the FMT Facility at the end of the contract and by whom the title resided. GFE indicates that the title resided by the Government before the start of the CORANET II contract. AUC indicates that the equipment was acquired under a CORANET II STP.

Area	Equipment	Vendor	GFE	AUC	Rutgers*
General					
	Boiler (400 HP)	Cleaver Brooks			X
	Air Compressor	Ingersoll Rand			X
	Vacuum Pump	Busch	X		
	Pallet Jacks	Various			X
	Storage Freezers	Various			X
	Storage Refrigerators	Various			X
	Blast Freezer				X
	Hubs/Ethernet				X
	PFMIS				X
Food Preparation					
	Jet Sweep Oven	Energyst			X
	Kettles 3-Gal - 300 Gal	Various			X
	Pumps	Various			X
	Flash Pasteurizer	IDD			X
	Homogenizer (lab)	Gaulin			X
	Co-Extruders	Vemag			X
	Ovens	Various			X
	Dough Sheeter	Rondo			X
	Dough Mixers	Stephen			X
	Dough Presses	Rondo			X
	Hobarts 4 Q - 80 Q	Hobart			X
	Fryer	Nothum			X
Packaging					
	Powered Conveyor	EAL			X
	Yaguchi Seamer	Yagushi			X
	Polymeric Heat Sealer	Raque	X		
	Piston Filler	Raque			X
	MV Inspection System Poly Tray	Xyntek	X		
	MV Inspection System Multivac	Precision Automation	X		
	Tiromat HFFS	Kramer Grebe	X		
	Robot Filler	Adept			X
	Tumble Filler	Solbern			X
	Rotary Filler	FEMC			X
	Inspection Conveyor	NEDCO			X
	Oden Liquid Filler	Oden			X
	Dixie Can Seamers	Dixie			X
	Benchtop Tray Sealer	Reycon			X
	Ink Jet printer	VideoJet			X
	Single Pouch Impulse Sealer	AIE			X

	Single Pouch Heat Bar Sealer	Wrapade		X	
	Check Weigher	HiSpeed			X
	Vertical Pouch Sealer	Fresco			X
Retorting					
	Stock 1100/1 Retort	Stock			X
	Stock 1100/4 Retort	Stock	X		
	Retort Loader/Unloader	Brenton			X
	Data Acquisition System	Ellab			X
	Heat Penetration Analysis Software	Ellab/TPRO			X
	Heat Penetration Equipment	Ellab			X
	Counter Pressure Profiler	Stock			X
QA					
	MRE Leak Tester	ITI Qualitek	X		
	PolyTray Leak Tester	ITI Qualitek	X		
	MULD	Precision Automation	X		
	Incubators	Various			X
	Internal Pressure Tester, Pouch	Rutgers			X
	Internal Pressure Tester, Poly Tray	Rutgers			X
	Destructive Residual Gas Tester	Rutgers			X
	Non Destructive Residual Gas Tester	Precision Automation			X
	Non Destructive Seal Strength Tester	Rutgers			X
	Seal Peel Strength Tester	Chattillon			X
	Brookfield Viscometer	Brookfield			X
	Water Activity Meter	Rotronic			X
	Microscope	MircoMaster			X
	Texture Analyzer	Stable MicroSystem			X
	Color Analyzer	Minolta			X
	Environmental Chamber	Fisher Scientific		X	
Misc					
	Injection Mold 1100 Rack	Stock America	X		
	Injection Mold 1400 Rack	AllPax		X	

* Some equipment was available via one of Rutgers clients that work at the facility



Tiromat Horizontal Form Fill Seal (GFE)



Raque Heat Sealer (GFE)



Stock Retorts (GFE)



Multi Unit Leak Detector (GFE)



Machine Vision System MRE pouches (GFE)



Machine Vision System Half Steam table Tray (GFE)

3.1.3 Technology Demonstration

The CAFT/FMT facility was used during this period to demonstrate, simulate and validate system improvements and train personnel from combat ration producers.

For example, assistance was given to University of Georgia to scale their Egg process up from the lab scale to plant scale. Production procedures were developed that are similar to the procedures used in large scale production systems and process conditions were determined that complies with regulatory requirements. Product samples made at the Demo Facility that were then sent to the US Army Natick Soldier Center at Natick and back to the University of Georgia for evaluation. It was found that the product produced by the Demo facility was statistically similar to product made at the UGA lab.

Assistance was also given to Texas A&M in the development and evaluation of new rack materials by exposing it to stresses normally found in an industrial retort application and then evaluating the effects on the rack material.

Rutgers University utilized the Demonstration site for all their short term projects. For example, the Demonstration site was used by STP#2027 to improve the quality of baked goods. In this case, the Raque Heat Sealer was used in combination with batter preparation equipment and ovens that were located at the Demo site

Similar, STP#2028 made extensive use of the Demo site by producing improved wet-pack pear product. The Tiromat in combination with the retort capability of the demo site were critical in the success of this project and allowed them to produce samples under tightly controlled manufacturing conditions.

Also, frequent assistance was given by the Demonstration Facility to packaging companies that were developing new/improved packaging materials for the military and civilian industry and are in need to stress the laminates in a retort environment. A direct result of these efforts was the qualification of Fresco for the military Institutional Pouch.

The Demonstration facility was also used by combat ration producers to get training in the operation of the GFE retort control system and to study the effects of retort counter pressure on the overall performance on container integrity. The Demo facility has unique knowledge in this area and can determine in minimum time the optimal pressure profile that should be used in a retort process that will minimize container stresses.

3.1.4 Ration Producer Assist

The Demonstration site provided assistance to individual ration producers while they are installing new features on line in their enterprise, and gather resulting data for evaluation and further improvements.

For example, the site was used in validating the non destructive seal tester for polymeric trays as a follow on of STP#2016 which had ended. Trays with marginal seals were produced using the Raque heat sealer. These trays were then sent to the ration producers to validate the performance of their own non destructive seal tester.

Similar support was given to one of the producers that needed to evaluate non-destructively the residual gas in a large quantity of polymeric trays. A system, developed under STP#2002, was slightly modified for this purpose and sent to the producer to successfully rework their production lots.

The retort capability of the facility was used to provide feedback to Texas A&M on the performance of various materials in retort racks

When the surge for Iraqi Freedom occurred, the Demo Site supported the ration producers during surge. Retorts were deployed and support given during the startup of these retorts. Retort racks were made available from the Demo Site inventory to one producer to avoid production delays due to rack lead times.

Similar, the Tiromat Horizontal Form Fill and Seal equipment was deployed to a producer of baked goods, in order to increase its capacity until it had received additional equipment.

Training and assistance was provided to the producers on an as needed basis and within the guidelines of the program that requires that assistance is of general nature and not private consultation.

3.1.5 Equipment Disposition

The CORANET program acquired during the ManTech program various pieces of equipment. This equipment needed to be relocated at the end of the program. Some of the equipment was taken over by the Industrial Base Preparedness program, some of the equipment was donated to Rutgers University and remained at the FMT Facility and some of the equipment was shipped to to DSMO as surplus equipment. Below is a table identifying the CORANET equipment and their disposition.

Equipment	Vendor	IBP	Disposed to DSMO	Donated to Rutgers
Vacuum Pump	Busch			X
Polymeric Heat Sealer	Raque	X		

MV Inspection System Poly Tray	Xyntek		X	
MV Inspection System Multivac	Precision Automation		X	
Tiromat HFFS	Kramer Grebe	X		
Single Pouch Heat Bar Sealer	Wrapade			X
Stock 1100/4 Retort	Stock			X
MRE Leak Tester	ITI Qualitek			X
PolyTray Leak Tester	ITI Qualitek			X
MULD	Precision Automation		X	
Injection Mold 1100 Rack	Stock America	X		
Injection Mold 1400 Rack	AllPax	X		
Enviromental Chamber Model: 11-679-25C	Fisher Scientific			X

3.1.5.1 Donation to Rutgers University

At the conclusion of CORANET II contract, DLA donated to Rutgers, the Stock 1100/4 Retort, the Bush Vacuum pump, MRE Leak tester, the Poly Tray leak Tester, the Wrapade pouch sealer and the Fisher Scientific Environmental Chamber. See Appendix II for letter with additional details.

3.1.5.2 Surplus Equipment

The following GFE Equipment was shipped to a Government Depot as surplus equipment.

- Machine Vision System for Multivac
 - Crate #1: W:56"; L: 44"; H: 50", estimated weight 2,000 lb
 - Crate #2: W:52"; L:121"; H: 83", estimated weight 3,000 lb
 - Crate #3: W:43"; L:35"; H: 84", estimated weight 2,000 lb
- Machine Vision System Poly Tray
 - W: 53"; L:42"; H 96", estimated weight 1,000 lb
 - Uncrated dimension: 43"x32"x88"
- Multi Unit Leak Detector
 - Main Unit: W: 96" L: 144" H: 76", estimated weight 10,000 lb
 - Controller: W: 70" L: 70" H: 86", estimated weight 2,000 lb
 - Uncrated dimension: 58"x58"x70"
 - Conveyors (3): W: 60"; L:160"; H: 32", estimated weight 2,000 lb



Shipment to DSMO warehouse

3.1.5.3 Industrial Base Program

The Industrial base program took ownership of the following equipment:

- Tiromat Horizontal Form Fill Seal Equipment
- Raque Polymeric Heat Sealer

This equipment was shipped to
Marengo Warehouse
300 Union St.
Marengo, IN 47140
The contact at this location is:
Brian Venturi 812-365-9616



Raque Heat Sealer



Raque Infeed Conveyor



Tiromat, Horizontal Form Fill and Sealer

3.1.6 Conferences, Briefings and Meetings

Contract briefings were held on the following dates:

- 27 March 2003
- 19 November 2004
- 14 July 2006
- 10 October 2007

3.2 Short Term Projects (STP's)

Rutgers presented more than 40 “phase 0” proposals for various projects. A total of 17 projects were funded.

3.2.1 Phase 0 Proposals

The following potential projects were submitted, but not funded:

1. Design of a Nozzle System for Brine Fill Applications.
2. MULD upgrade.
3. Develop Software for Unified Group Ration Packaging to optimize packaging density
4. Coining of the Polymeric Tray Flange.
5. Post Retort Material Handling Automation for Poly Tray
6. Implementation of enhanced RFID Technology (advanced sensor technology)
7. Replacement of oven-method moisture measurement with water-activity test
8. Shelf-Life Improvement of MRE Fruit and Cheese (Joint proposal with Tennessee). The Cheese Spread component of this proposal was awarded to Tennessee
9. Computerized Work Force Training Program for new Employees during Surge
10. Assessment of enhanced Machine Vision Technology for Seal Inspection.
11. Assessment of Hema Seamer
12. Manufacturability of Shelf Stable Pocket Sandwiches
13. Reduction of Free Fatty Acids in Bakery Products
14. Analysis of Secondary Packaging Requirements for Polymeric Tray Rations.
15. Reducing the Meal Bag Size in order to reduce the case size and improve the stacking of the pallet
16. Assist domestic suppliers to develop alternative pouch materials for MRE retort pouches
17. Development of alternative secondary packaging design for the sleeve in which the poly tray is packed.
18. Non Destructive Residual Gas Testing for Pouches
19. Non Destructive Seal Testing for Retort Pouches
20. Non Destructive Seal Testing for Bakery Pouches
21. Time coding versus sub lot coding for material traceability
22. New Retort Technology Evaluation
23. Enhanced Infusion of Antioxidants into Combat Rations using High Pressure Process. (Will be awarded under CORANET III program)
24. Replacement for the Flameless Ration Heater. (Will be awarded under CORANET III program)

3.2.2 Approved Projects:

The following projects were approved and funded as delivery orders under the Demonstration Site contract:

- STP#2001: CORANET Support and Technical Transfer
- STP#2002: Universal Benchtop Package Integrity Tester for Polymeric Tray
- STP#2003: Upgrade Tiromat Horizontal Form Fill Seal Equipment.
- STP#2008: Retort Upgrading for Surge
- STP#2009: Moisture Content of Commercial Items in MRE
- STP#2010: Retort Racks for Polymeric Trays in 1400 Spray Retorts
- STP#2013: GFE Assessment
- STP#2016: Non Destructive Seal Strength Test.
- STP#2019: Manufacturability of H&S in Institutional Pouch.
- STP#2020: Rapid Assembly Module.
- STP#2022: Assessment of TAMU rack material in Polytray Racks using Spray Retorts.
- STP#2023: Pocket Sandwiches, *Listeria* Growth Modeling.
- STP#2024: Effectiveness of a Knurled Heat Seal Bar.
- STP#2025: Four Sided Seal Tester
- STP#2027: Quality Improvement Project for Shelf Stable Bakery Products
- STP#2028: Wet Pack Fruits Quality Improvement
- STP#2004C: Ultrasonic Sealing Transition

In each of these projects, the Demo site played a key role in the success of the project. All projects made use of the space and equipment provided under the Demo Site contract to ensure that the project was brought to a successful conclusion that included scale up to a production environment.

3.3 Non Traditional Capital Investment Criteria (NCIC)

The CAFT/FMT Staff promoted heavily the use of NCIC in projects that evaluated advanced technologies. An extensive study, using this technique, was conducted under STP#2019 in which it could be clearly be shown that the Institutional pouch had significant benefits over the traditional #10 can even though the acquisition price of the product would be initially higher

3.4 Packaged Food Manufacturing Information Services (PFMIS)

The CAFT/FMT Staff disseminated Research and Development, Science and Engineering Technology through technical reports and working papers made available via the web. Reports are used to summarize specific efforts, mini projects or other significant tasks. The CAFT/FMT Staff maintained a web based server that makes monthly, quarterly and final reports available to other Partners as well as presentations and other relevant information. The web site's address is: <http://www.coranet2.org/>

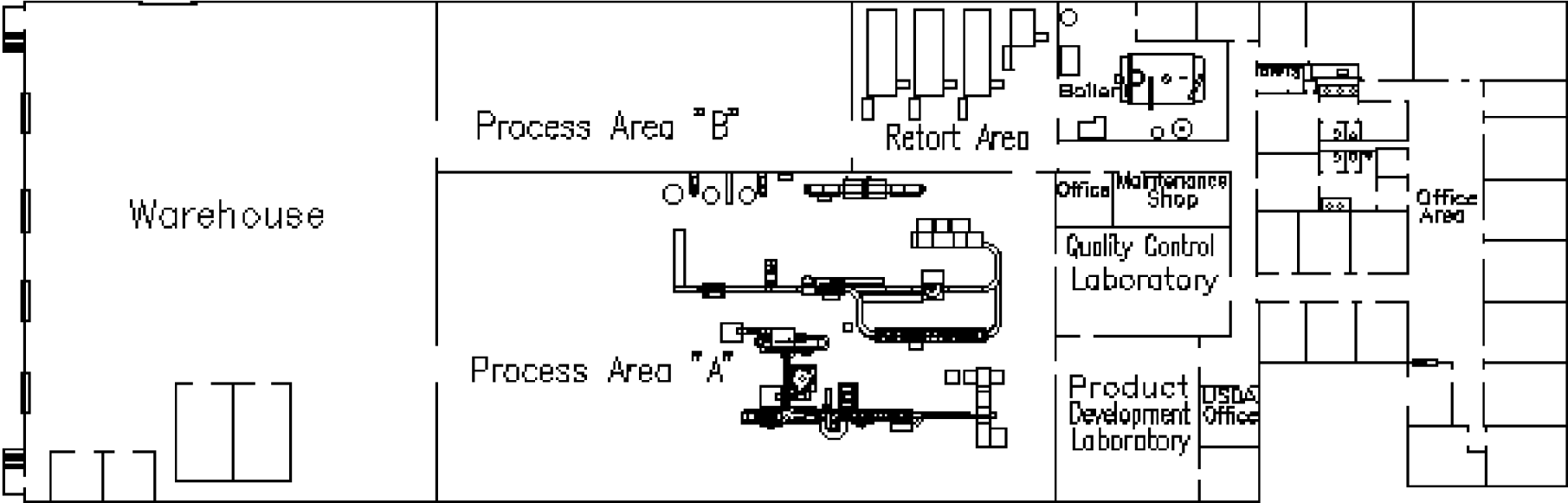
Hard copies of these reports were made available as requested.

4 Appendix

Appendix I : Plant Layout

Appendix II: Equipment Disposition Letter

Plant Layout





DEFENSE LOGISTICS AGENCY
DLA CONTRACTING SERVICES OFFICE - PHILADELPHIA
700 ROBBINS AVENUE
PHILADELPHIA, PENNSYLVANIA 19111-5092

IN REPLY
REFER TO

Matt Ryan, DCSO-P

August 24, 2009

ATTN: Ricks Bruins, Rutgers University

SUBJECT: Transition of Combat Rations Network (CORANET) Equipment from Contract Number SP0103-02-D-0024 with Rutgers University, to Rutgers University.

The CORANET Demonstration Facility Contract, SP0103-02-D-0024 with Rutgers University, played a major role in developing new systems, improving product quality, reducing cost, and increasing the industrial base capacity for all metrics of CORANET program success. Without the Demonstration Facility and its professional staff, the technology transfer would have been greatly hampered. However, as the CORANET program matured, the need for a dedicated facility diminished. At this time, the CORANET program management believes that it is in the best interest of the Government to discontinue Combat Ration Demonstration Facility. The Program Management has determined that the equipment listed below is not needed by the program and has been reviewed by the Defense Contract Management Agency.

Equipment	Vendor	Disposition Instructions	Acquisition Cost	Comments
Vacuum Pump	Busch	Donate to Rutgers	\$13,660.00	Serial # C1870. This equipment is useful to the FMT facility to keep the facility a viable resource for future CORANET
Single Pouch Heat Bar Sealer	Wrapade	Donate to Rutgers	\$9,825.00	Serial# K1139 This equipment is useful to the FMT facility to keep the facility a viable resource for future CORANET projects.
Stock 1100/4 Retort	Stock	Donate to Rutgers	\$150,000.00	Serial 64027# This equipment is usefull to the FMT facility to keep the facility a viable resource for future CORANET projects. It includes racks. the equipment is currently used by STP#2029
MRE Leak Tester	ITI Qualitek	Donate to Rutgers	\$17,150.00	Serial# 37385 This equipment is useful to the FMT facility to keep the facility a viable resource for future CORANET projects.
PolyTray Leak Tester	ITI Qualitek	Donate to Rutgers	\$39,760.00	Serial # NA This equipment is useful to the FMT facility and we like to keep it
Environmental Chamber	Fisher Scientific	Donate to Rutgers	\$4,783.00	Serial #1883061118144 This equipment is useful to the FMT facility to keep the facility a viable resource for future CORANET projects

A determination has been made for the following equipment to be passed to The Rutgers University, Piscataway, NJ, who will take ownership and responsibility.


MATTHEW RYAN
Contracting Officer