Director's Message
Brad Carlberg
BSC Engineering - Daphne, AL

Happy New Year! I hope the holiday season treated you & yours well & I hope 2002 is shaping up even better! With all the events of last fall, it has to improve, right? I'm EXTREMELY excited to begin my term as PUPID Director. (After talking with past Directors, I may have a different answer at the end of my term; but I sincerely doubt it.) To get my term kicked of right, I've written this initial "Logger" Newsletter (the first of 4 to come in this & next year) to highlight the busy and, some of you might say overly

continued on page 2

2002 ISA PUPID / TAPPI PCE&I Spring Symposium
Brad Carlberg
BSC Engineering - Daphne, AL

This upcoming March 3 – 7 ISA PUPID will again partner with TAPPI for the Spring Symposium at the 2002 TAPPI PCE&I / ISA PUPID Joint Symposium held in conjunction with the TAPPI Paper Summit at the Georgia World Congress and Wyndham Downtown Hotel in Atlanta, Georgia. This year ISA PUPID has four sessions (double the number of sessions from last years Spring Symposium in San Antonio). I will again have the pleasure and honor of moderating a discussion panel, this year entitled "Web-Based HMI's"

To find out more about this panel and the other three ISA PUPID sessions, go to the TAPPI website at http://www.tappi.org/index.asp?rc=1&pid=3147&ch=4&ip=9

The panel will be comprised of Bill King of Siemens Energy & Automation, Perry Carroll of Wonderware; Rebecca Maxson and Ed Brown of Entegreat, and Bruce Jensen of Yokogawa.

In developing the panel, I hope to give attendees the opportunity to "pick the brains" of the panel with questions like: "Do you think Internet Explorer and/or Netscape will replace the proprietary HMI's?"; "will OPC, XML and Visual Basic replace the traditional DCS?"

In the second of the four ISA PUPID Technical Sessions, Joe Weiss, who received his ISA Fellow Award in 2001 and is the EIS Program Manager at EPRI in Palo Alto, California and Keith Unger of Entegreat in Birmingham, Alabama, who was quoted in Ellen Fussell's "Standards Update" in December's InTech, will again ask the probing, thought-provoking

"ISA PUPID / TAPPI PCE&I Symposium" continued on page 4
ambitious, schedule; but, wait & see, we might surprise you. I've laid out the "Logger" into four or five (for lack of a better word) themes:

First, and probably most important, I'd like to direct you to the full-page calendar on page 3 that (I hope) can be very helpful to keep track of the ENTIRE years' activities including deadlines & email links for conference presenters, dates & locations of the conferences, as well as links to the conference technical programs so you can see QUICKLY see if somebody is presenting on a topic that can answer your questions for a current or upcoming project. As PUPID Technical Conference & Symposia Coordinator also I WILL have 9 sessions, 1 room for 3 full days, devoted to Pulp & Paper at the Fall Expo 2002 Conference & Exhibition. I'll share the "spotlight" if any of you want to help me, so that we can be like the Chemical & Petroleum Division & take on a 2nd Room & 2nd Track of the program. But, that can wait until next year.

Second, I've heard several comments in the past about this and other newsletters saying that they're filled with "too much fluff, extraneous information & BS" & not enough technical info to make it worth taking the time to read it. With that in mind attempting to turn that around, I've Included three "Technical Tips" (continuing and four "Product Showcases" focusing a particular product with the vendors I've found for that product.

Third, please look at page 2 and the PUPID Scholarship "rebirth" blurb. Talk it up amongst your family, friends, & colleagues. I'm learning that in today's economy student aren't interested in "wasting they're time" for ONLY $1000; but the Graduate Students are more interested in the exposure than the money. We WILL give it away, someone you know might as well try for it, right?

Fourth, I've added the links to the global societies & institutions & personally looked at a lot of them in an effort to see why with ONLY 4 million people Kiwis (New Zealanders) in their entire country and the Scandinavian's are so good at making paper (personally, being 25% Swede & 25% Norwegian, I think it's because they ARE Scandinavian - but, always remember - & if you know me, I'm a perfect example of this - "you can always tell a Swede, but you can't tell him much." I don't know about the Kiwis YET.) I would hope to get some kind of reciprocal membership between the Aussies, Kiwi, & Scandinavian pulp & paper societies if that's possible. Right now (or very soon), we have reciprocating links to each other's websites for you to explore.

Fifth, there is a little bit of fluff with the Mentor Program testimonials, my occasional attempts at humor etc.

Finally, I like to get your comments & ideas regarding the format AND content of the newsletter. I've purposely made these articles under a page (about as small as I thought I had better go using 9pt fonts) to get the most info in that space. I have INTENTIONALLY broken with what a lot of the other ISA divisions do; that is, simply republish conferences papers in the newsletter. To me, that is duplication. If you want a paper it's already available somewhere else either on the Proceeding CD or, for the some of the PUPID sessions, the Powerpoint presentations are on the PUPID website. Frankly, I don't want to waste my time either on a newsletter nobody reads; that's stupid. (I ain't the smartest person in the world, & I WAS born "in the dark", but it wasn't LAST night!). Seriously, I've learned a lot of new things by contacting the people that contributed & I hope that by increasing the technical contact, making things short to get more, different articles into the newsletter it can become something you come to WAIT FOR the next one.

I've taken too much time to write this & besides that, it's got to get over to Kelly Bishop, ISA Staff Division Support Coordinator so she can "do her magic" so that it can get to all y'all on time!

So, I'll look forward to hearing from a lot of you telling me what you want in upcoming Logger newsletters & hopefully seeing your presentations (or at least seeing you) at either the Spring or Fall conference. The next 2 years are going to be great for pulp & paper (business is going to pick up) & PUPID; hold on tight!

Follow-up on ISA 2001 As you may (or may not) know, ISA 2001 was held at the George R. Brown Convention Center in Houston on Monday, September 10 through Wednesday, September 12. With the terrorist actions on Tuesday, September 11 in New York City and Washington, D.C; the PUPID technical sessions came off fairly well, with a "show must go on" mentality, although (obviously) Tuesdays attendance was NOTICABLY down to a minimum with most attendees either glued to a television set or scrambling to find a way home (wherever that might have been). The best attended of PUPID's seven technical were the first session on Monday morning ("Tuning, Process Control & Problem Solving" developed by Mike Cantor with George Buckbee - "One Size Does Not Fit All: Tuning A Controller for Your Specific Process"; ISA Society Scholarship Award Winner Mark Lambert - "Triangulation Solves The Process Control Performance Puzzle"; and Michel Ruel - "Valve Health Certificate") and last session Wednesday morning ("Web-Based HMI Panel" with InduSoft's Marcos Taccolini and OSIsoft's Osvaldo Bascur) with near the rooms at near capacity and over 40 people for both. We gave out FREE at the PUPID Luncheon Meeting on Tuesday in Houston and had only about twelve QUALITY people. COME to a FREE lunch next year in Chicago!

New PUPID Officer Beginning in 2002, Steve Moon has agreed be the PUPID Director-Elect. Welcome (and thanks), Steve, with your help we'll make PUPID better!

Honors & Awards Beginning in 2002, there is a call for students in a pulp & paper program or students working (or desiring to work) in pulp & paper to apply for one of the two $1000 scholarships. If you've got a favorite co-op or summer student to apply. Contact Mike Waller
And Finally, if you are doing your job. I am more than confident that it will be rewarding career-wise as well as personally.

several examples of duplication of efforts & "reinventing the wheel". So, in that vein, "Shrinking the Globe" As I was sending emails to various PUPID members (and non-members) outside of the U.S.A. and almost always impressed with the pulp & paper expertise of the expatriated Scandinavians & Kiwis, in particular, that I've worked with; then after looking at some of the links to the global pulp & paper technical institutes & societies (that are now included on the PUPID website) I began to see a vast, untapped area of knowledge (and, having made only one, 3-week visit out of the North American continent, felt somewhat ignorant of what's happening in pulp & paper around the world). I saw several examples of duplication of efforts & "reinventing the wheel". So, in that vein, I challenge each & every one of you out there to take the time (if you haven't already) to search out a (or several) counterpart-colleague(s) in another area of the globe & begin dialogs to learn how they are doing their job. I am more than confident that it will be rewarding career-wise as well as personally.

And Finally, PUPID STILL needs YOUR help Hopefully, you all received your copy of the Summer PUPID Newsletter. The last newsletter took ONLY FIVE hours to write (on a relaxing Sunday afternoon); (although, to be true, I've tweaked it a lot since). Anybody can do it, we'll give you a Microsoft Word template to make it EASY. If you are interested in helping with the growth of the Pulp and Paper Industry Division please contact either myself at brad.carlberg@bsc-engineering.com or any of the other PUPID officers listed on page 4 & on the PUPID website at http://www.isa.org/~pupid/pupidofc.htm. GET READY FOR ISA 2002 IN CHICAGO NEXT YEAR!

ISA PUPID SCHOLARSHIPS

Mike Waller - PUPID Education Co-Chair

The pulp and paper industry division of the International Society for Measurement and Control has established a scholarship to increase interest in the instrumentation and process control components of the pulp and paper industry. Two $1000 scholarships will be offered for the 2002-2003 school year. One will be offered to a student entering their junior year, and the other to a student entering their senior year. The winner of the Junior Year Scholarship is eligible to apply for the Senior Year Scholarship the following year, on an equal basis with all other candidates.

Selection of the scholarship winners will be based on the Scholarship Committee's opinion of the candidate's potential contribution to the pulp and paper industry.

To be eligible to apply for one of the scholarships, a candidate must be:

1. Either a student member, or a dependent of a member of the Instrument Society of America.
2. Enrolled as an undergraduate leading to a bachelor's degree in an engineering, science, or pulp & paper program.
3. A junior or senior during the 2002 school year.
4. Able to demonstrate a significant interest in the instrumentation/process control component of the pulp and paper industry.

Candidates can obtain application forms by writing to M.H. Waller, PUPID/ISA Scholarship, PAPER SCIENCE and ENGINEERING DEPARTMENT, MAMU UNIVERSITY, Oxford, OH, 45056, calling (513) 529-2205, or sending an e-mail to wallermh@muohio.edu. To apply, candidates must send the following items to the above address, to arrive no later than February 28, 2002:

1. Completed application form.
2. Official transcript from the applicant's university.
3. Three letters of recommendation from persons familiar with the applicant's character, interest in the pulp and paper industry, educational accomplishments, school activities and leadership roles.

Scholarship winners will be notified by April 15, 2002. Unsuccessful candidates will be notified at the same time.
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ISA Pulp & Paper Industry Division 2002 Calendar

Weekdays:
- Monday (M)
- Tuesday (T)
- Wednesday (W)
- Thursday (T)
- Friday (F)

Events:
- ISA Pulp and Paper Industry Division Newsletter
- TAPPI/Pulp & Paper Industry Division (PUPID)
- ISA

Calendar Periods:
- December (DEC)
- January (JAN)
- February (FEB)
- March (MAR)
- April (APR)
- May (MAY)
- June (JUN)
- July (JUL)
- August (AUG)
- September (SEP)
- October (OCT)
- November (NOV)
- December (DEC)

Dates:
- 29 January (JAN)
- 27 February (FEB)
- 23 March (MAR)
- 30 April (APR)
- 28 May (MAY)
- 1 July (JUL)
- 28 August (AUG)
- 31 September (SEP)
- 27 October (OCT)
- 29 November (NOV)
- 1 December (DEC)

CALENDAR OF EVENTS

Get a quick overview of the ISA PUPID events for 2002 by going to the Calendar at:
http://www.isa.org/~pupid/2002_PUPID_Calendar.htm

ISA PRESIDENT’S WINTER MEETING
FEBRUARY 09 - 13, 2002
JACKSONVILLE, FL

ISA PUPID / TAPPI PCE&I JOINT SYMPOSIUM
AT TAPPI PAPER SUMMIT
GEORGIA WORLD CONGRESS CENTER - ATLANTA, GEORGIA
MARCH 4 - 7, 2002

ISA PRESIDENT’S SUMMER MEETING
JUNE 08 – 12, 2002
RESEARCH TRIANGLE PARK, NC

45TH ANNUAL ISA POWER INDUSTRY (POWID) CONFERENCE
12TH ANNUAL JOINT ISA POWID/EPRI CONFERENCE
THIRD ANNUAL ISA POWID/EPRI/DOE CONFERENCE
SAN DIEGO, CALIFORNIA
JULY 2-7, 2002

ISA PRESIDENT’S FALL MEETING
MCCORMICK PLACE SOUTH, CHICAGO, IL
OCTOBER 21-24, 2002

ISA 2002
MCCORMICK PLACE, CHICAGO, IL
OCTOBER 21-24, 2002

HOW HAS YOUR LIFE & WORK CHANGED SINCE 9.11?

EXCERPTS FROM THE PUPID LyrIS LISTSERVER QUESTION:

"AS AN INDIVIDUAL, I READ NEWS REPORTS A LITTLE MORE CLOSELY AND WORRY A LITTLE MORE ON THE INSIDE. AS A SON, HUSBAND, FATHER AND GRANDFATHER, I AM MORE AWARE OF THOSE I LOVE . . . AND ACT ACCORDINGLY. AS A SUPPLIER OF CONTINUOUS EMISSION MONITORING SYSTEMS, I WORK A LITTLE HARDER AND I SPEND A LITTLE MORE TIME GETTING PAST SECURITY AND INTO PLANTS TO MEET WITH OTHER ENGINEERS AND ENVIRONMENTAL FOLKS AND I STILL DRIVE AND FLY AS REQUIRED TO DO MY JOB. AS A BACKYARD GARDENER, I CAN’T WAIT TIL SPRING." - JOHN CHAPMAN HOUSTON, TEXAS

"ISA PUPID / TAPPI PCE&I Symposium " continued from page 1 question; "Is Your Process Control System Secure?” in the “Control Systems Security Roundtable”.

- Control systems are vulnerable by design
- Open architecture/open systems can be even more vulnerable
- Security and performance are often mutually exclusive
- Backfit of security is usually not an option
- Very few personnel with control system AND information security expertise
- Control system security issues are unique and information security technology companies have not addressed them

Excerpt from “Information Security Issues for Industrial Control Systems” by Joe Weiss from ISA 2001 in Houston

If you missed either of Joe’s sessions from ISA 2001 in Houston last September, you can meet and talk with Joe at the 2002 TAPPI / ISA PUPID Joint Symposium in Atlanta.

In the third of the four ISA PUPID Technical Sessions, entitled “Improving Overall Equipment Efficiency” ; John Johnson of Entegreat in Birmingham, AL will present a paper describing his SQL-based package with a paper entitled “Making OEE a Reality”; and John Chapman of The Chapman Company in Houston, TX will answer your remaining “Cluster Rules” questions with his paper entitled “Integrated Data System For Meeting Continuous Emission Monitoring Requirements In A Kraft Mill”. Chip Rennie of Orion-CEM & Scott Pettigrew of Empowering Solutions will wrap up the session with a paper titled “Recovery Boiler Advanced Controls”.

Tom McCloskey of TEMCO Engineering in Atlanta, Georgia and the Session Developer for the second technical session, “Consistency Control”, at ISA 2001 in Houston, will wrap up ISA PUPID’s technical sessions in Atlanta with his tutorial entitled “Consistency Meter Sampling & Calibration”. See y’all in Atlanta in the Spring!

CONGRATULATION TO STEVE & JACK!

STEPHEN PROUT,P.E.; INSTRUMENT & PROCESS ENGINEER WITH ALABAMA RIVER PULP IN PERDUE HILL & A PUPID MEMBER FROM THE MOBILE SECTION, & JACK RODGERS; VP, NUCLEAR BUSINESS FOR OHMART/VEGA IN CINCINNATI, WERE THE “COVER GUYS” FOR THE OCTOBER ISSUE OF InTech MAGAZINE FOR THEIR PAPER “NUCLEAR TECHNOLOGY APPLIED TO CHIP BIN LEVEL” WHICH THEY PRESENTED IN PUPID’S MONDAY AFTERNOON SESSION AT ISA EXPO’2001 IN HOUSTON.

STEVE’S DEDICATED, I’VE SEEN EITHER HE OR STEWART WRIGHT FROM ARP (80 MILES FROM MOBILE) AT ALMOST EVERY MOBILE SECTION MEETING THAT I ATTEND & I ONLY DRIVE 15 MILES!
I think it is important that we each realize the debt we owe to mentors in the past and try to emulate that for the future. Thanks to these guys and all the others who helped me in so many ways.

Gerald Wilbanks 1995 ISA President Documentation & Engineering Services Birmingham, Alabama (205) 822-8787 geraldwilbanks@desllc.net

If you have a testimonial: send it to brad.carlberg@bsc-engineering.com

PUPID Executive Board

WE NEED YOUR HELP!

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ISO Standards Technical Committee List

ISA Standards
PUPID needs a Standards & Practices Committee Chairman!
Get involved in an S&P Committee.

ISA PUPID Newsletter Editor
PUPID needs a Newsletter Editor!
It’s easy, we’ll give you this “cool” template! I did this in 5 hours!
Simplified Moisture Control Strategy

By Matt Petras - ControlSoft Inc. You can reach Matt at mpetras@controlsoftinc.com or http://www.controlsoftinc.com/

Moisture is often very difficult to control. This may be on account of interactions between temperature zones, drying time, variation in the amount and/or quality of material being dried, etc. Single-loop control by definition does not take into account these interactions, but rather must wait for the resulting error to appear and then respond. This unavoidable error causes over-drying which results in wasted material and higher costs.

How do you solve the moisture control problem? Decoupling the variables in the control loop can improve the quality of control. In this manner, the control loop compensates for the interactions between variables before the resulting error occurs. Consider the simplified example of material being dried in a multiple-zone oven. The material will dry differently depending on the speed of the belt carrying the material and the temperature of the oven. In this example, the flow of material to the belt is constant but the moisture of the incoming material varies with time.

In this example, we will use Coordinated Control to control moisture. The Coordinated Controller (CC) block is a predictive model-based controller that decouples up to three variables with a single process variable. The CC block can also be cascaded to include more variables. However, in this case, we will use oven temperature and belt speed as outputs of the CC block, and we will use inlet moisture as an additional input to the moisture CC block. In the CC block, we develop a model using first order lag plus deadtime; this model is between the outlet moisture and each of the inputs (inlet moisture, belt speed, and oven temperature). This model can be calculated offline or by using the auto-tuning functionality of the CC block. The controller uses this model to predict the value of the outlet moisture based on the three variables. The difference between the predicted and actual moisture is fed back to a model-based controller that is a realizable inverse of the process model for the output chosen for primary control.

Reject disturbances and optimize outputs The goal of the CC block is two-fold: reject any disturbances to the process and optimize the controller outputs during long-term steady state control. CC achieves these goals by using two independent lists named Active and Target. The Active list tells the CC block which controller output is the strongest and most effective. The Target list tells the CC block the desired long-term steady state value of the outputs. In this example, there are two controller outputs: oven temperature and belt speed. Oven temperature has the strongest effect on drying, and, therefore, is the one chosen first on the Active list. However, it is desirable to keep the temperature of the oven at a specified value. Therefore, once the moisture reaches steady state, the CC block will drive the oven temperature to a target value while compensating with belt speed. Due to other disturbances that may affect the temperature of the oven, the temperature setpoint from our Coordinated Controller is cascaded to individual PID blocks for each zone, using a proper delay to compensate for material travel time. This delay is taken into account in the process model of the CC block. The above control strategy is a general strategy for moisture loops; each application may require changes to fit its specific needs. However, using model-based predictive control, such as Coordinated Control, strong interactions can be compensated for, resulting in a higher quality of control when compared to traditional PID approaches.
I read your article (Pulp & Paper Trends) in the Summer 01 issue of the Logger Newsletter with great interest. In it, Chris Rogers stated that he will look for improved ROI from his controls. In fact, he states that he is willing to share savings with his suppliers. I believe that this is where one of the major philosophical shifts will (or should?) occur. It forces vendors to “put their money where their mouth is.” The way to achieve this is not only through technology, but through staff knowledge and skills. Which leads me to your last comment where you state that we, as Process Control Engineers, should be more than “DCS/PLC configurators and part time IT technicians”. I fully agree, but however, before we can use the “Process Control Engineer’s Toolbox of advanced control software proliferating the market these days”, Control Engineers should re-learn (or just plain learn) how the basic PID controller works. My company has trained hundreds of instrument technicians and control engineers over the past nine years, and I can tell you that fewer than ten percent have a good idea on how a PID controller works, let alone how to tune it.

Brad, in the long run, we can say that there is really no substitute for “Tech-Knowledge-y”.

Also, I read Michel Ruel’s article “Process optimization, more than loop tuning!”. First, I must state that I dislike the word “optimization”. I believe that the word has lost significant meaning due to it’s overuse (we only have the marketing people to blame for that!). At the end of his article, Michel states that the loop should not be re-tuned until the “process is modified or the equipment is replaced or modified”. Though that statement is true, it is too “narrow”. The performance of a control loop (using statistical techniques called Time Series Analysis) should be re-examined on a regular basis. The frequency of this re-evaluation should depend on the importance of the loop. Important loops should be evaluated on a monthly to bi-monthly basis, lesser important loops on a less frequent basis. This re-evaluation process becomes a predictive maintenance tool, since the performance of each loop tracked over time. This technique can be compared to vibration analysis of mechanical equipment, except that the degradation of a control loop is a lot slower and more insidious. Once we have noticed that a control loop is “misbehaving”, it has been going on for a long time (and eating our lunch also!). So generally, I find that this topic of tuning loops and “optimizing” loops misleading. It is not a one-time-fix-all phenomenon. It should be part of a continuous improvement process that has no “end” box.

Regards,
Sylvain Millette, P. Eng. Millette Control Engineering Inc millette@cois.on.ca

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RE: STUFF BOX REPLACEMENT WITH LOOP FOR PRESSURE CONTROL
FROM: PatDixon@aol.com

The basis weight valve is used to add thick stock to the dilution flow in the thin stock system. Therefore, the basis weight flow control loop should remain isolated from a fan pump speed or streamflow valve, which is used to maintain the proper headbox pressure, which affects the jet velocity and rush/drag ratio, which affects formation. Therefore, you have 2 sheet properties of concern; basis weight and formation. Therefore, you need 2 independent actuators to control each effectively. It is true that the response of fan pump speed to headbox pressure is on the order of seconds, and the response of the basis weight loop to weight measured at the reel is in minutes. This is good; it effectively de-couples the loops. In every machine direction control installation I have participated in, there is no account for interaction in either of these loops. My advice; get good process design, instrumentation and headbox pressure control, and handle basis weight control separately.

You can reach the site at http://www.isa.org/shellcgi/lyris.pl?sub=44841&id=139436904
**PRODUCT SHOWCASE - DRAINAC TM ON-LINE FREENESS TRANSMITTER / ANALYZER**

**BY MICHAEL JACKSON THOMPSON EQUIPMENT COMPANY, INC.**

Detector: The detector assembly consists of a 2” diameter, 316SS, vertical riser partitioned from the transparent acrylic tube by a 316SS perforated screen. The riser includes a 316SS full port ball valve for isolation and a stock line pressure transmitter. Within the transparent tube are 316SS con-ductance probes for filtrate level detection and a spray nozzle for cleaning the screen. Furnished with the detector are solenoid valves for control of flush water to the spray nozzle, tube / electrode wash, and under screen tangential swirl. The detector is hinged to provide screen access (24” mini-mum height required). Services required are flush water and air pressure at a minimum of 10 psig above the maximum stock line pressure.

Detector Control Panel - A stainless steel wall-mounted 20”x20”x6” NEMA 4X cabinet (floor-mounted pedestal optional) is provided for electronic and pneumatic support circuits, stock line pressure gauge, and detector tube pressure gauge. An industrial microprocessor provides level sensing, sequencing logic, blow down and flush time control, freeness calculation, automatic calibration, and graphic display of the information to the operator. An isolated output of 4 -20 mA DC will drive up to 900 ohms of maximum load. Air filter / regulator with pressure gauge included. The cabinet will have external on / off switch and internal components tubed and wired, with user connections labeled. Drainage Rate Indication System. An on-line instrument that continually measures the drainage rate of stock being sampled from any stock line with a minimum working pressure of 20 psig. The output is a proportional 4-20mA DC signal. The unit consists of two major sub-assemblies; a detector and a detector control cabinet.

**Principle Of Operation** Pressure in the detector chamber above the screen is alternatively biased negative and positive with respect to the stock line pressure. During negative pressure, stock rises to the screen. The stock builds a fiber mat on the screen which the filtrate must pass to rise into the measurement chamber. The rate of rise of the filtrate in the chamber is the drainage rate. The time required to fill the detector from the lower to upper level probe is measured and the corresponding freeness is calculated. The result of the calculation is converted and outputted as a proportional 4-20 mA DC signal. The detector pressure is then made positive with respect to the stock line pressure, forcing the fiber mat downward back into the stock line. Flush water is then admitted through the three entries during the exhaust phase to ensure the detector is clean. The cycle is then repeated. The Drainac TM IIIB includes a very effective, simple engineering design to compensate for significant changes in process variables that can affect freeness, specifically, pressure, consistency, temperature, and pH. Normal changes in these variables for any given grade will have no meaningful effect on the instrument's ability to measure freeness. However, grade changes requiring and major shift in one or more of these four variables can easily and accurately be handled by Drainac TM IIIB through the use of the multiple calibration characteristics. The microprocessor has the capability to retain up to (10) ten different setting and calibration parameters.

**Product Information** Overhead clearance of 24” above the stock line surface is required. The detector tube must be mounted in a vertical position. The detector will hinge back to allow for operator access for cleaning. The detector sub-assembly may be installed in a vertical position anywhere it is desirable to measure the drainage rate of the stock. The stock line pressure should be between 20 psig and 90 psig. The Drainac TM IIIB can be applied in consistencies ranging from 0.5% to 6.0% and readily adaptable to other consistencies. Probes: 316SS (Standard) other materials available

Pressure: Stockline (10 - 90 psi); Low Pressure Unit (0 - 25 psi) Stock Velocity: 0.1 - 10 ft./sec
Freeness: 0 - 800 CSF, 10 - 90 0 SR, Williams Precision
Slowness, 0 - 300 sec Drain Time
Consistency: 0.5 - 6.0%(readily adaptable to other consistencies)
Probes: 316SS (Standard)
other materials available

Sample Rate: 2-3 samples per minute typical
(1) 4-20 mA Analog Input for active compensation & (1) 4-20 mA Analog Output for compensated freeness
Recipe Memory: Retains (10) ten settings and calibration parameters.
Flush Points: Top of chamber spray, over screen spray, and below screen flush

You can reach Michael at michaelj@teco-inc.com or http://www.teco-inc.com
PRODUCT SHOWCASE PQM™ IN-LINE PULP ANALYZER

BY LARS NORIN – METSO AUTOMATION

General
The PQM In-Line Pulp Analyzer is a further development of more than 20 years of experience in pulp testing analyzing the drainage properties of pulp and using optical measurement methods for monitoring fiber dimensions and shive content. Over the years, more than 300 analyzers have been installed in various applications in mechanical and chemical pulping systems worldwide. The PQM In-Line Pulp Analyzer incorporates a new sampler, a new device for measuring the freeness CSF directly, and a combined camera/processor chip for extremely rapid and accurate image analysis of fibers and shives. The new sampler permits continuous sampling with minimized risk for plugging in high consistency applications.

One PQM In-Line Pulp Analyzer is normally dedicated to each process location. A PQM In-Line Pulp Analyzer can be purchased with or without the freeness CSF device, whereas the camera device is always included.

Sampling Device
A new type of patented sampling device is utilized. This device has several benefits over traditional sampling devices. The sample is continuously extracted and diluted. The dilution water is added and mixed with the stock in the pump inside the measuring cabinet. The diluted stock is then fed back to the sampler. Turbulence in the process line in front of the sampler blends the diluted sample with the stock. The amount of “new” pulp taken in by the sampler is in balance with the degree of recirculation in the sampler and the amount of dilution water added. With this sampling device it is possible to perform analysis in high consistency positions, where in the past it has been very difficult or impossible to extract such samples. This device will handle pulp consistencies up to approximately 8%. This continuous sampling method automatically provides a representative sample, as opposed to conventional one-shot batch samplers. It also minimizes the risk of plugging and requires only a small amount of dilution water. A continuous flow of pulp from the sampler passes through the PQM cabinet at a controlled consistency.

Measuring Principle
Freeness CSF
The freeness device has a container identical to the laboratory CSF apparatus with respect to size, volume and screen plate. The freeness measurement cycle starts by filling this container with a pulp suspension controlled to a consistency of 3 g/l (0.3%) in the sample circulation loop. During the drainage process through the screen plate, the volume and the temperature of the pulp suspension are recorded as functions of time by the PQM computer. From these recordings, the computer calculates the volume that would be collected by the measurement cylinder of a CSF laboratory apparatus. The PQM computer applies a temperature correction and presents a CSF or SR value.

Shive Classification
The consistency of the pulp suspension flow in the sample loop and camera loop is controlled to 150 mg/l and each shive and its size (length, width) are continuously recorded by the camera.

The PQM computer classifies the number of shives per gram of pulp into 16 different categories of size. The computer also calculates and displays a weight percentage that correlates with Somerville or Pulmac measurements of shives. Shive images can also be displayed and stored.

Fiber Classification
The consistency of the pulp suspension flow in the camera loop is controlled to 5 mg/l and each fiber and its dimensions (length, width) are continuously recorded by the camera. The projector length between the endpoints of each fiber is recorded for the calculation of the curl index. The PQM computer displays a continuous fiber length distribution curve, a table of classification in 5 length classes, the average length, width, coarseness and the curl index. Fiber images can also be displayed and stored.

Measuring Capacity
The measuring cycle of a fully equipped PQM In-Line Pulp Analyzer can easily be configured to include or exclude any of the measuring functions. To achieve maximum measuring capacity it is necessary to have stable process conditions (consistency, flow rate) and short piping distances between the sampler and the PQM (max 10 m). A complete cycle including measurement of freeness, fiber and shive classification takes about 8 minutes. Switching between different sampling points adds about 1 minute to the cycle due to backflushing. Other configurations are easily implemented. For instance, one or several freeness measurements can be configured for the measurement cycle. The time for recording shives and fibers in the continuous flow through the camera can be changed, as well as the sequence of the different measuring functions.

Results Presentation
A Presentation Computer System (PCS) typically located in the control room can administer several PQM In-Line Pulp Analyzers in the mill, and display the measurement results on a monitor and print report tables and graphs on a color printer.

The following measurement data are displayed and printed by the PCS.

In addition to the standard tables and graphs of the measurement data, any variable or combination of variables measured can be trended by the user-friendly trend package. This trend package is included in the PCS. The measurement data from typically the last 5000 measuring cycles are stored in the PCS, and made available for trending and analysis. Averages for the hour, the shift and the day are also calculated, stored and made available. The storage capacity is configurable, and practically limited only by the size of the PCS hard disk.

Components
The camera, the PQM computer, the freeness tester, pumps and electronics of the PQM In-Line Pulp Analyzer are pre-assembled in the PQM instrument cabinet of stainless steel (PQM field unit). The sampler is mounted to a process line and connected to the PQM instrument cabinet through acid-proof steel piping. A laptop service computer, which can be connected directly to the PQM instrument cabinet, is also included. The Presentation Computer System (PCS) comprising a computer with color monitor, keyboard, mouse and color printer is normally located in the control room, and connected to the PQM instrument cabinet through a serial, multidrop RS 485 link twisted pair cable.

The PCS can also provide different types of computer links which can be connected to other external computers such as a PC network or a DCS system for transmission of measurement data. Detailed dimensional and environmental requirements and installation specifications are found in the PQM In-Line Pulp Analyzer installation manual.

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LOOP TUNING ... IT SHOULD BE THE LAST THING YOU DO!

BY SYLVAIN MILLETTE, P.Eng.

Rarely does a week or month go by without someone in the Process Control/Instrumentation field coming across an article on control loop tuning. Never has so much ink been spent on how to set two (and sometimes three) numbers, yet there still remains a severe lack of both knowledge and understanding of what a control loop is actually capable of. Almost every tuning publication either extols the “optimal” response (who are “they” to decide what is optimal for your process?) or is based on outdated tuning methods. Moreover, little attention is paid to the actual design of the control loop itself. Some designers feel that if a control loop has a sensor and a final control element, then the control loop should be able to control. This is far from the truth. There are several important factors that will affect the performance of the control loop; they are Process Design, Control Strategy Design, Instrumentation and finally Loop Tuning.

There are several important factors that will affect the performance of the control loop; they are Process Design, Control Strategy Design, Instrumentation and finally Loop Tuning.

Process Design “Thou Shall Know Thy Process” Processes are often designed with a “steady-state” mindset. This means that the mass/energy of the process does balance out, however, little attention has been paid to the actual dynamics of the process. Take for example a pH control loop. The pH is controlled by injecting caustic into the base of a tank. Moving the point of “injection” to the suction of the pump will make the loop more “responsive” and controllable.

Control Strategy Design “No Loop is an Island Unto Itself” Proper control strategy design requires a thorough understanding of the process and any potential interaction between control loops with the said process. However, there is a notion that if there are more controllers are on a process line, the better the control will be! The classic example is a flow controller that is also under pressure control as well. Though sometimes, due to safety or other important consideration, the two controllers are necessary, more often than not, the opposite is usually better. For properly designed control strategies, “less” is often “more”.

Instrumentation “It’s only a valve!” One third of control related problems are due to faulty instrumentation, be they transmitters or control valves. Typically, in the past, the weakest link is the control valve. Though with the advent of smart positioners, the performance and precision of control valves has improved. Transmitters have also evolved; nowadays we have smart transmitters that communicate over some network (Fieldbus, Profibus etc.). Though such instrument networks can provide some cost reduction in field wiring, commissioning and maintenance, discussing these points in detail would take up too much ink. However, from a control perspective, there are several factors that must be considered if one of these networks is to be implemented. They are data sampling rate, data reporting, and quantization.

Loop Tuning “How Do I Want My Loop to Respond?” Finally, we come to loop tuning! Tuning loops is usually the responsibility of, both Instrumentation technician/technologist, electricians, and sometimes engineers. Our colleges and universities often neglect this important subject or teach outdated methods such as Quarter-Amplitude-Decay (Ziegler-Nichols, Reaction Curve, etc). Also, very little time is dedicated to the functionality of the PID controller, and the tuning lecture is often concluded with sentence: “…and if this doesn’t work, then just play with the gain and reset until you get the loop to respond in a satisfactory way”. What “satisfactory” means is very subjective. A second scenario that can occur is when a recent college graduate tries one the taught tuning method and fails. He/she then loses confidence in these methods and relies on the tried and true method of Trial-and-Error. When teaching loop tuning, our colleges and universities fail to bridge the theory-practice gap, and in so doing, fails the industry as a whole.

Conclusion Control loop performance evaluations have shown that, roughly 20-25% of control loops evaluated actually improve process stability and reduce variability. The remainder either does nothing for the process or are actually increase process variability. It is clear that control loop tuning is not the “fix all” that it is often portrayed to be. More often than not, control loops are “untunable” due to poor process design and instrumentation.

You can reach Sylvain at millette@cois.on.ca
The economic benefits of process optimization and reducing process variability

By George Jablonsky ASCT & Doug Nelson P.Eng., ProNamics Control Inc.

Introduction It is widely accepted that reducing process variability will improve product quality. However, unless the mill is able to sell the improved product for a premium or can secure more sales the economic benefits of reduced product variability may be limited and/or difficult to quantify.

The reduction in process/product variability does present opportunities for substantial economic benefit through production rate increases or operating cost reduction. These opportunities for economic benefit are mill specific and understanding the mill economic drivers and area production limitations is required. It is often the case that integrated mills will have different benefits than stand alone operations.

This article focuses on quantifying the economic benefits from reducing cyclic variability and process upset variability.

Cyclic Variability In this case, the process oscillates continuously. The causes of cyclic variability are too numerous to discuss here, but range from process design issues to poor controller tuning. Appreciating the benefits from reducing cyclic process variability is a two-step process. The first step is to reduce variability in key process variables. The second step is to shift the operating targets.

Reducing cyclic variability may enable an overall shift in the production rate as shown in the dryer limited pulp machine example below. Decreasing the BW variability from the red line to the blue line allows a Basis Weight target shift to the green line. The increased production rate may represent the most important economic benefit.

In the example shown below, the paper machine moisture variability is caused by variability in the wet end. Reducing the wet end variability reduces the moisture variability from the red line to the blue line. This allows a moisture target shift (green line) to the upper moisture specification that will reduce dryer energy consumption.

Process Upset In this case, the process responds inappropriately during transitional periods such as grade & speed changes. This is often due to unnecessarily slow controller tuning that ultimately results in high amounts of off-grade product.

In the example below, reducing the ClO2 variability from the red line to the blue line will allow the operator to target shift the ClO2 dosage (to the green line) while still achieving the brightness target.

The economic benefits of reducing the process variability can be determined by estimating conservatively the amount of the target shift and calculating the associated reduction in chemical or energy costs.

Summary There are no set formulas for calculating the economic benefits of reducing process variability for all mills. The benefits must be evaluated on a mill-by-mill basis.

The estimated economic benefit can be determined by estimating the increase in production due to the increased time to on grade. The mill economic drivers must first be understood. The key process variables that affect these drivers must then be assessed. Reducing the variability in these key process variables will often allow target shifting to occur, which in turn will result in production rate increases or a reduction in operating costs.
**Throw Out Those Valves! Alan D. Weldon, P.E. ProCon Technologies, Inc.**

The pneumatic control valve has been the workhorse of the process control industry since the beginning of time. Actually, the heyday of the pneumatic control valve was the 1950’s and ’60’s, but for most baby boomers that equates to the beginning of time. Field surveys, conducted over the last 10 years, have found that the single largest source of poor control loop performance is the control valve. So why do we continue to use pneumatic valves? Is it habit, price, experience? During the last couple of decades tremendous advances in variable frequency drive technology have been made. Variable Frequency AC drives (VFD) have matured to the point that they are not only reliable, but also affordable.

However, even with the dramatic decrease in the cost of VFDs, in many cases they are still more expensive than a control valve. This is particularly true in the case of retrofits. So what are the advantages of a VFD? The big advantage that always comes to the forefront is, of course, energy savings. There is a fundamental difference in the way that the way that a control valve and a VFD operate. A VFD generates only enough hydraulic energy to match the load required. Conversely, a constant speed pump and control valve arrangement generates an excess of hydraulic energy, only to dissipate, and therefore waste, this energy through the pressure drop across the valve.

The energy that is wasted by using a control valve can be calculated by the following equation:

\[
\text{Wasted Energy} = \frac{Q_{max} \cdot \Delta P \cdot G \cdot \text{energy efficiency}}{3960 \cdot \text{Hp}}
\]

The analogy that is often used to describe the difference between a control valve and a VFD is one of controlling the speed of an automobile. The use of a control valve is analogous to controlling the speed of the automobile by pressing the accelerator to the floor and modulating the brake to control the automobile’s speed. Driving an automobile this way would obviously be a tremendous waste of gasoline and generate excessive wear and tear on the brakes and engine components. This is exactly what is done when a control valve is used. The use of a VFD as a final control element is comparable to the way that an automobile’s speed is typically controlled. Normally the speed of the engine is controlled by modulating the accelerator, not the brake, thus allowing the automobile to operate in a much more efficient manner. Such is the case when a VFD is used for control. Only the energy required to maintain the speed necessary to deliver the desired load is expended. This results in energy savings and saves wear and tear on the valve and pump.

Energy is only one of the reasons to consider a VFD, however. Improved control performance is typically as important, albeit not as tangible. A VFD can typically provide a faster, more linear dynamic response over the operating range than can a typical control valve. Additionally, a VFD is not susceptible to the mechanical non-linearities such as backlash and stiction that are normally a problem with control valves. A faster dynamic response and more linear dynamics allow the control loop to be tuned more aggressively, increasing the controller bandwidth and the range of process variability that can be attenuated.

### Table I

<table>
<thead>
<tr>
<th>Item</th>
<th>Control Valve</th>
<th>Variable Frequency Drive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment Efficiency</td>
<td>Better</td>
<td>Better</td>
</tr>
<tr>
<td>Motor Efficiency</td>
<td>Better</td>
<td>Better</td>
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<tr>
<td>Power Factor</td>
<td>Better</td>
<td></td>
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<tr>
<td>Operating Costs</td>
<td>Better</td>
<td></td>
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<tr>
<td>Flexibility of Location</td>
<td>Better</td>
<td></td>
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<tr>
<td>Exposure to Process</td>
<td>Better</td>
<td></td>
</tr>
<tr>
<td>Ease of Installation</td>
<td>Better</td>
<td></td>
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<tr>
<td>Specification</td>
<td>Better</td>
<td></td>
</tr>
<tr>
<td>Shutoff Capability</td>
<td>Better</td>
<td></td>
</tr>
<tr>
<td>Ability to Control</td>
<td>Better</td>
<td></td>
</tr>
<tr>
<td>Potential for Leaks</td>
<td>Better</td>
<td></td>
</tr>
<tr>
<td>Installed cost: small large</td>
<td>Better</td>
<td></td>
</tr>
<tr>
<td>Maintenance: valve/drive</td>
<td>Better</td>
<td>Better</td>
</tr>
<tr>
<td>Equipment Expertise</td>
<td>Better</td>
<td></td>
</tr>
<tr>
<td>Spare parts</td>
<td>Better</td>
<td></td>
</tr>
</tbody>
</table>

Table taken from: *Variable Speed Drives, Principals and Applications for Energy Cost Savings*. David William Spitzer, ISA Press

New and more novel uses for VFDs are being found every day. In the Pulp and Paper industry one of the most critical control loops for making quality paper is the Basis Weight flow control loop. Typically, the control valve for this application has been an electrically actuated, high performance, ball valve. Recently several mills have found that, removing these valves and installing a VFD on the thick stock pump, has provided them with improved performance and a noticeable reduction in Basis Weight variability in the final product. This is just one example of a new and novel application that, has in the past, typically been the domain of the control valve.

Of course, no technology is perfect. As with any technology there are pitfalls and “gotchas”. To ensure proper applications, an engineering study should always be performed. The table below lists some of the pros and cons of each of the technologies.

With the cost of energy on the rise, the use of VFDs will increasingly be considered as a way of reducing costs. However, energy savings should not be the only consideration to be used for project justification. Improved control performance should also be a major consideration when trying to justify the use of a VFD for a particular application. The companies that produce the highest quality product at the most competitive cost are the ones that will be around for the next millennium.

So, the next time you need to replace an existing valve or install a new one, consider the alternative. It is likely that if the entire life cycle costs are considered, it might be a better option to, “throw out that valve”, and install a variable frequency drive.

You can contact Alan at adweldon@procon-tech.com
Honeywell’s New Control Technology Unifies Process, Machinery and Drives Control
By Matti Pulkkinen Honeywell

Matti sent this to include in this Logger saying that it was introduced at the PulPaper exhibition in Helsinki last June and the first installations have been in Finland & the other Scandinavian countries. Here is the “official” press announcement:

Honeywell will make its North American announcement of its new PMD (Process, Machinery and Drives) process control system at EXFOR in Montreal January 30, 2002. PMD unifies the control of the process, machinery and drives into a single system. Controls are implemented using the Honeywell Field Controller, which also connects various field networks as an integral part of the automation system.

The new user interface for PMD takes full advantage of Honeywell’s HMIWeb™ technology. Based entirely on Web technologies, the HMIWeb architecture uses HTML as the native display format, allowing the most open and direct integration of process, application and business information available. HMIWeb supports access to process graphic displays from either the secure process control environment or directly from Microsoft Internet Explorer for casual users without requiring functionality-reducing “exports” or “fat” plug-ins. HMIWeb provides a unique combination of Internet graphic-rendering technologies and secure, robust and high-performance information access. In addition, HMIWeb’s revolutionary architecture is positioned to directly leverage new Web technologies as they continue to develop.

The new system’s data communications are based on Fault Tolerant Ethernet, which brings optional redundancy to Ethernet solutions and provides data communication reliability to meet conventional, exacting process automation requirements. Ethernet technology also allows the automation system to be incorporated with the mill’s other information systems.

Ron Powell, Vice President and General Manager Honeywell Pulp, Paper and Printing, said that the new PMD concept represents a significant change in conventional process control methods. “PMD enables control of all process components by a single system and integrates various field networks as a seamless part of the automation system. The new user interface supports and expands the use and distribution of data and information. As a result, users can expect to achieve more efficient process management, increased productivity, decreased equipment requirements and reduced costs.”

Process, Machinery and Drives – All in One Single System

Until recently, machines and drives were controlled by stand-alone systems and seen as separate by operators and engineers. Now, the Field Controller’s unique processing capacity enables the integration of these elements with the process automation system. The user of the new system sees all process equipment in an identical fashion, which also simplifies maintenance work since equipment is reduced and becomes more uniform.

The Field Controller can control continuous and batch processes, high-speed machinery, stand-alone drives and line drives. Controller tools address conventional controls and logic, plus advanced control methods such as fuzzy logic, neural nets, statistical process control, multi-variable predictive control and optimization. Control functions are defined, tested and simulated by means of graphical tools, which are also used to define field network interfaces and the functions of devices connected to the field network. In addition, within this single, unified solution, a rich suite of standardized software applications allows the user to improve production and operating efficiencies.

The Field Controller Unifies the Field Network World

Currently, several field network standards are available in the market, each generated for a number of various needs. Until now, users have had to compromise, partly due to the connectivity restriction of automation systems’ field networks, and partly due to field network features.

The Field Controller provides a solution to these problems. The controller easily can connect to a wide variety of field networks. It currently interfaces to DeviceNet, Profinet, and Interbus standards, and the number of released standards will increase over time. Each Field Controller can be connected to two field networks that may be based on different standards. Multi-controller systems allow the connection of several field networks based on various standards, allowing optimum matching of the various field network properties with process control needs.

System functions, all process interfaces, and field network diagnostic and alarm data are displayed to process operators and application designers in an identical fashion, regardless of the field network in use. The diagnostic data items are channel-specific and enable efficient detection of field device faults, and the location of process malfunctions.

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THE NF 200 IN-LINE FREENESS SENSOR:
INCREASED CONTROL THROUGH IMMEDIATE AND RELIABLE MEASUREMENT

by Thierry Cresson, Ph.D CyberMetrics  http://www.cyber-metrics.com

Measure the Fundamental Properties of any Pulp
Correct refining is the first essential step in making high quality paper. The contribution of pulp fibrillation and surface area has a direct effect on paper properties such as tear, tensile strength, and opacity. Fundamental factors such as Specific Surface Area and Specific Volume also affect machine productivity factors such as dewatering and wet sheet tensile. Before the Das Jar, papermakers used static drainage and freeness measurement to characterize the changes in a pulp through refining. However, this approach did not allow the papermaker to separate the contribution from fines and other non-fibrous elements. Experience shows that pulps with the same CSF can behave very differently on the paper machine. The Oar Jar makes it possible to easily determine fundamental pulp properties of Specific Surface Area and Specific Volume for both the fibrous and non-fibrous fraction of any pulp. Proprietary software developed by CyberMetrics interprets this pulp “DNA” to reveal exactly how refining has changed a pulp. The Das Jar allows papermakers to produce higher quality pulps, more consistently, while using less energy. Cut fiber and wasteful fines can be minimized. In short, the Das Jar opens a door to a revolution in refiner control.

A Modular Approach
The Das Jar 400 is a complete system to automatically sample, measure, and analyze pulp fundamentals. But, the measurement processes used are familiar to Paper Scientists. The core technology of the Das Jar is computer-assisted drainage rate measurement and hyperwash fractionation. The Das Jar processes a sample to measure the drainage rate of both the whole pulp and the hyperwashed fraction. The system automatically compares the results from the two fractions to determine the effect of fines, and other additives such as fillers and pigments. The tests are performed rapidly and automatically to complete a full characterization in less than ten minutes.

The Hyperwash Fractionator
Each pulp sample is hyperwashed in the fractionator to remove non-fibrous elements such as fines and fillers. This operation is fully automatic and includes a self-cleaning step.

The Drainage Module
The instrument prepares a pulp sample then runs a dynamic drainage test in the first column. Drainage rate is measured with a high resolution ultrasonic sensor.

Advantages
Measures accurately due to a fixed pulp sample of 200 cc even when pressure in pulp stock line fluctuates.
Due to high dilution rates, pulp temperature has little effect and is maintained fairly constant. The optional temperature compensator can be used to automatically compensate for temperature fluctuations.
Provides an accurate measurement of freeness of any type of pulp. Can be correlated to any desired freeness standard.
Assures that normal fluctuations in pulp consistency have virtually no effect on measuring accuracy by starting fine measurement after pulp mat has been formed.
Maintain consistent refiner control by providing continuous in-line measurement every 3-5 minutes.
Operates for long periods with minimal maintenance. High-quality components include wet parts made of Teflon-coated stainless steel.
Eliminates pulp buildup by washing with high-velocity water after each measurement cycle. Eliminates inaccuracies caused by contamination.

Standard Specifications
Standard Measurements: Canadian Standard Freeness (CSF), Schopper-Riegler (SR)
Freeness Range: 1-800 cc (CSF)
Temperature Range: 50-175 degrees F
Consistency Range: 1-6%
Max Variation of Pulp Consistency: +/- 5% of standard value
Power Consumption: 50V A
Compressed Air Required: 65-140 PSI
Fresh Water Pressure Required: 30-140 PSI
Mounting Flange on Stock line: 4" (150 PSI)
Stock line Size: 6" Diameter Minimum
Measuring Accuracy: Fine Paper Stock: +/- 2.0 cc (CSF) Kraft Paper Stock: +/- 3.0 cc (CSF)
Dimensions: Sensor: 25" x 30" x 48" Control Cabinet: 8" x 18" x 20"

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**TAPPI Paper Summit**  
**March 4-7, 2002  Atlanta, GA**  
**ISA/PUPID Technical Session Schedule**

**Tuesday**  
**PANEL**  
Session #15  
(10:30am-12:30)  
“Web-Based Hmi’s” Bill King – Siemens; Atlanta, GA; Perry Carroll - Wonderware Atlanta, GA; Rebecca Maxson / Ed Brown – Entegreat, Birmingham, AL; Bruce Jensen - Yokogawa

**Wednesday**  
**PAPER**  
Session #24  
(8:00-9:30am)  
“Making OEE a Reality” John Johnson Entegreat, Birmingham, AL; John Chapman - The Chapman Company, Houston, TX  
Chip Rennie/Scott Pettigrew – Orion-CEM

**Wednesday**  
**ROUNDTABLE**  
Session #32  
(10:00am-12:00)  
“Control Systems Security” Joe Weis s – EPRI, Palo Alto, CA / J. Keith Unger – Entegreat; Birmingham, AL

**Thursday**  
**TUTORIAL**  
Session #41  
(8:00am-12:00)  
“Consistency Meter Sampling & Calibration” Tom McCloskey - TEMCO Engineering, Atlanta, GA


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**Canada Corner**  
As more and more area sawmills announce extended shutdowns as a result of trade tariffs and anti-dumping penalties assessed by the U.S., fiber supply for pulp mills is becoming a huge concern. In B.C., everyone is hoping for a speedy resolution to this dispute so additional jobs are not lost. News of the continuing downward spiral of the US economy is not a positive sign for Canadians. Investment in process improvements is now seen as a necessity for pulp producers to drive production costs down. That’s how I see it in B.C.

Brian Plamondon  
Shift Production Superintendent - Celgar Pulp

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**Central & South American Corner**  
Nothing from anyone there this time!  
Please send me something!

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**Far East Corner**  
Nothing from anyone there this time!  
Please send me something!

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**A View From Down Under**

Tony Johnson of (Eng'g consulting company) BECA Simons in New Zealand writes that he is the VP of APPITA (The Technical Association of the Australian and New Zealand Pulp and Paper Industry). He saw the link to APPI (the Australian Pulp & Paper Institute) on the PUPID website & thought a link to their Eng'g Special interest Group coul be worthwhile (I agree).

You can reach Tony at ajohnson@beca.co.nz

**Editors Note:** Although PUPID has 1300+ members, of that we have only a little over 100 members from the Asia & “Down Under”. According to their website, APPITA publishes their “APPITA Journal” six times per year with a circulation of 2100. I believe we can learn from what they’re doing “Down Under”. You can find the link to the APPITA & APPI websites on the PUPID website.

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**From The Land Of The Midnight Sun**

From Alexander Lauber (at the Swedish Institute of Technology):

Sorry to say. I am not expert enough to produce the required summary, so I have been looking for the right person in the Scandinavian P&P community to produce it.

However, in Scandinavia, normal activities close down from well before Christmas eve to Epiphany, January 6th (you DO work harder in America). People have been difficult to get at. I continue my research presently.

The chances to get the "News from Scandinavia" until January 14th are slim, alas, though not zero. If unavailable January 14th they could be published in the next edition of the Logger.

You can reach him at alexander.lauber@swipnet.se

**Editors Note:** I have received the exact comment ("I am not expert enough … ") from several people. Please, I implore you, I don’t want “expert testimonies”, but, rather, simple comments on what’s happening in your part of the world. Don’t be shy, let’s “shrink” the world & learn from each other. You can find the link to the Swedish Institute of Technology website on the PUPID website.
QUICKIES

ISA PULP & PAPER TECHNICAL DISCUSSION FORUM

Anybody (not necessarily an ISA or PUPID member) can subscribe to the PUPID Pulp & Paper Technical Discussion Forum. To subscribe, go to the PUPID homepage at http://www.isa.org/~pupid/, select "Pulp & Paper Technical Discussion Forum" in the pick box, click "Go", and enter your email address and a password.

ISA EMAIL ADDRESS FOR ALL MEMBERS

Any ISA member can register for a free email address and online mailbox. If you set it up, your ISA email address will be yourname@member.ISA.org. To register, go to http://www.isa.org/membership/benies/ and follow the registration instructions.

ISA PUPID CALENDAR

Get a quick overview of ISA PUPID events for 2002 by going to the Calendar at:
http://www.isa.org/~pupid/2002_PUPID_Calendar.htm

ISA Pulp & Paper Industry Division
P.O. Box 12277
Research Triangle Park, NC 27709

LINKS TO RELATED WEBSITES

ISA PULP & PAPER WEBSITE
http://www.isa.org/~pupid/

ISA PULP & PAPER TECHNICAL DISCUSSION FORUM
http://www.isa.org/shellcgi/lyris.pl?sub=44841&id=139436904

ISA 2001 TECHNICAL CONFERENCE SESSION SCHEDULE
http://www.isa.org/technical_conference/TechConf.cfm?id=3

PULP & PAPER RESEARCH INSTITUTE OF CANADA
http://www.paprican.ca/

TAPPI
http://www.tappi.org/

AMERICAN FOREST AND PAPER ASSOCIATION
http://www.afandpa.org/

NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS
http://www.nspe.org/

SWEDISH ROYAL INSTITUTE OF TECHNOLOGY
http://www.pmt.kth.se
http://www.hut.fi/English/

HELSINKI UNIVERSITY OF TECHNOLOGY
http://www.hut.fi/English/

TECHNICAL ASSOCIATION OF THE AUSTRALIAN AND NEW ZEALAND PULP & PAPER INDUSTRY (APPITA)
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