VEEMScan

Presentation

January 2018

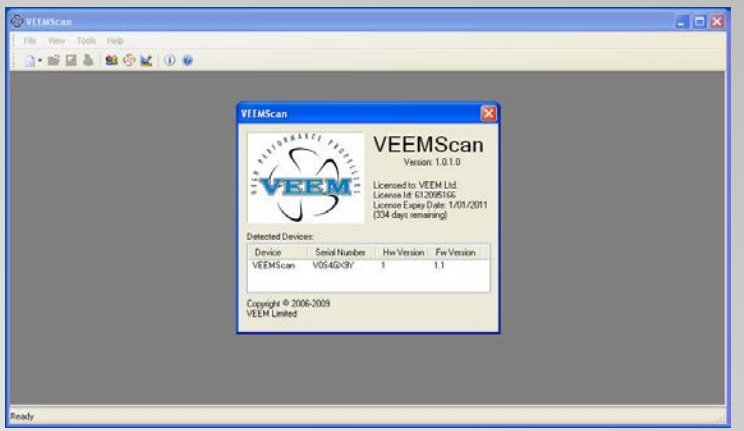
Introduction

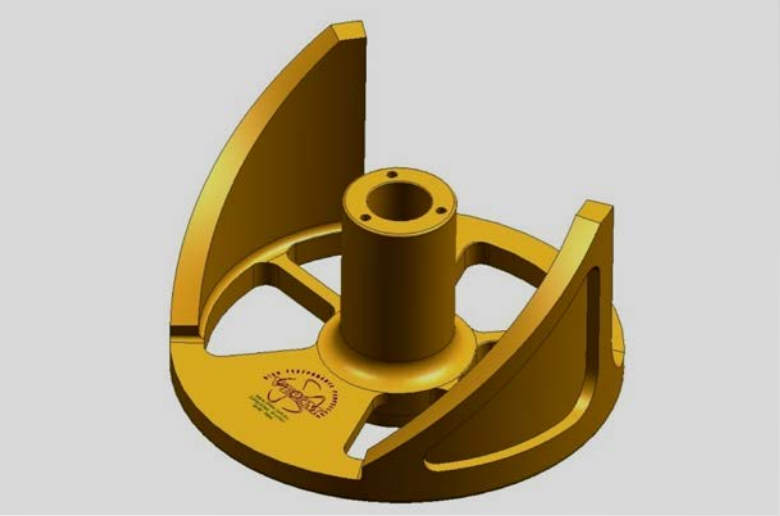
- VEEMScan is a VEEM “in-house” developed system aimed at enhanced and simplified dimensional inspection of VEEM propellers
- VEEMScan incorporates software, measuring hardware and special tools for system calibration and validation
- VEEMScan will provide VEEM representatives access to proprietary design information to assist in propeller checking and repair

- Some existing systems use basic, non-absolute nor incremental measuring systems
- Poor diagnostic or calibration facility
- Reliance on custom made measuring components
- High reliance on operator skill to avoid accumulation errors due to hardware design
- Setup is critical to reduction of errors
- Design data is modified to account for probe diameter rather than correctly offsetting measured data .... reporting therefore states adjusted rather than true pitch
- Chord truncation increases uncertainty
- Non “international” standard reporting

Background

- Concept
- System Overview
- Hardware Overview
- Artefact
- Software Overview
- Software Details





Content

VEEMScan Concept

- To produce a flexible system that provides improved accuracy, lower uncertainty and offered tools to validate the system performance
- Known and logical maths in geometry analysis functions
- Highly configurable
- Make use of existing hardware where possible
- Familiar output
- Advanced features to support VEEM representatives

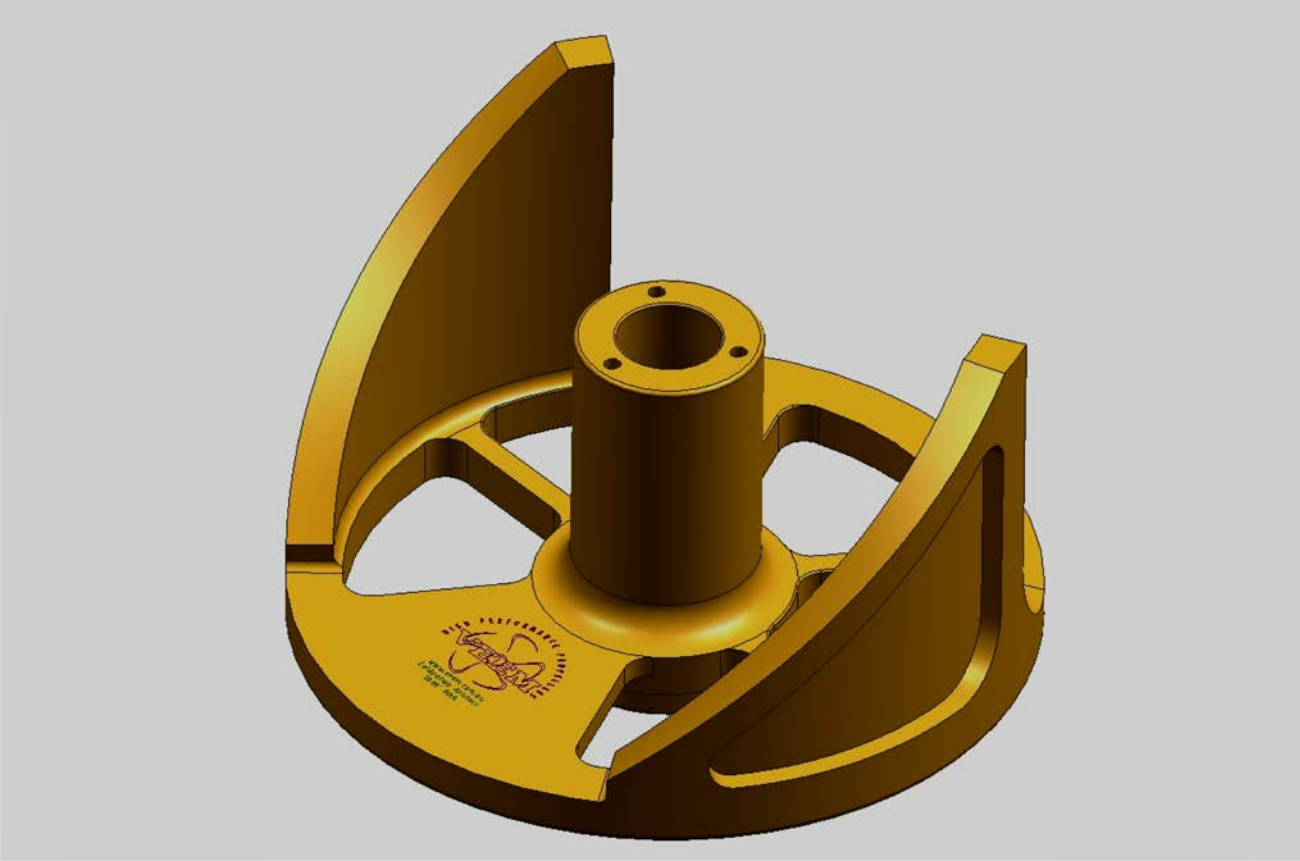
- Hardware
  - USB based interface to measuring components
  - Encoders and mechanical components
  - Cables / Junction Boxes
- Software
  - VEEMScan PC software (Windows)
  - VEEMScan interface firmware
  - Oracle XE Database
  - License control software
- Artefact
  - Calibrated pitch gauge with left and right hand pitches

VEEMScan System Overview

- USB measuring system interface
- Absolute measuring system capability
- Industry standard quadrature encoder interface
- Up to 3+1 axis (3 quadrature, 1 single channel)
- Compatible with custom made hardware
- Additional inputs and outputs
- Propscan compatible
- Hale MRI compatible
- Firmware updateable online

VEEMScan Hardware Overview

- Calibration tool for system setup verification and measurement uncertainty determination

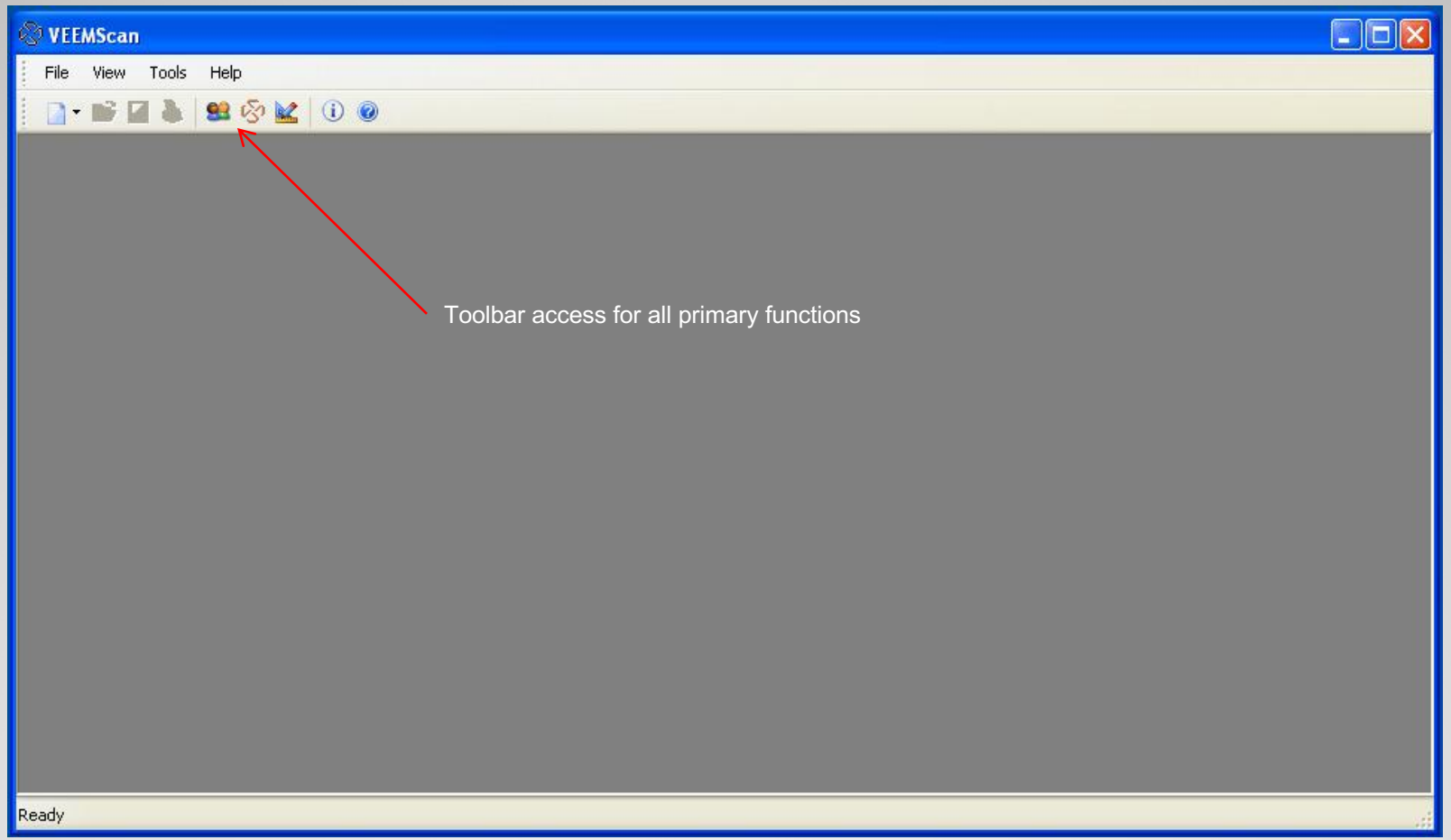


VEEMScan Artefact

- Windows based (XP, Windows 7 32/64 bit)
- Oracle 10g XE database
- Multi-user
- Flexible configuration
- Diagnostic tools
- Single button measuring operation
- Universal interface for old and new hardware
- Import existing data and designs
- Updates available on-line
- Licensing provides for full or partial versioning

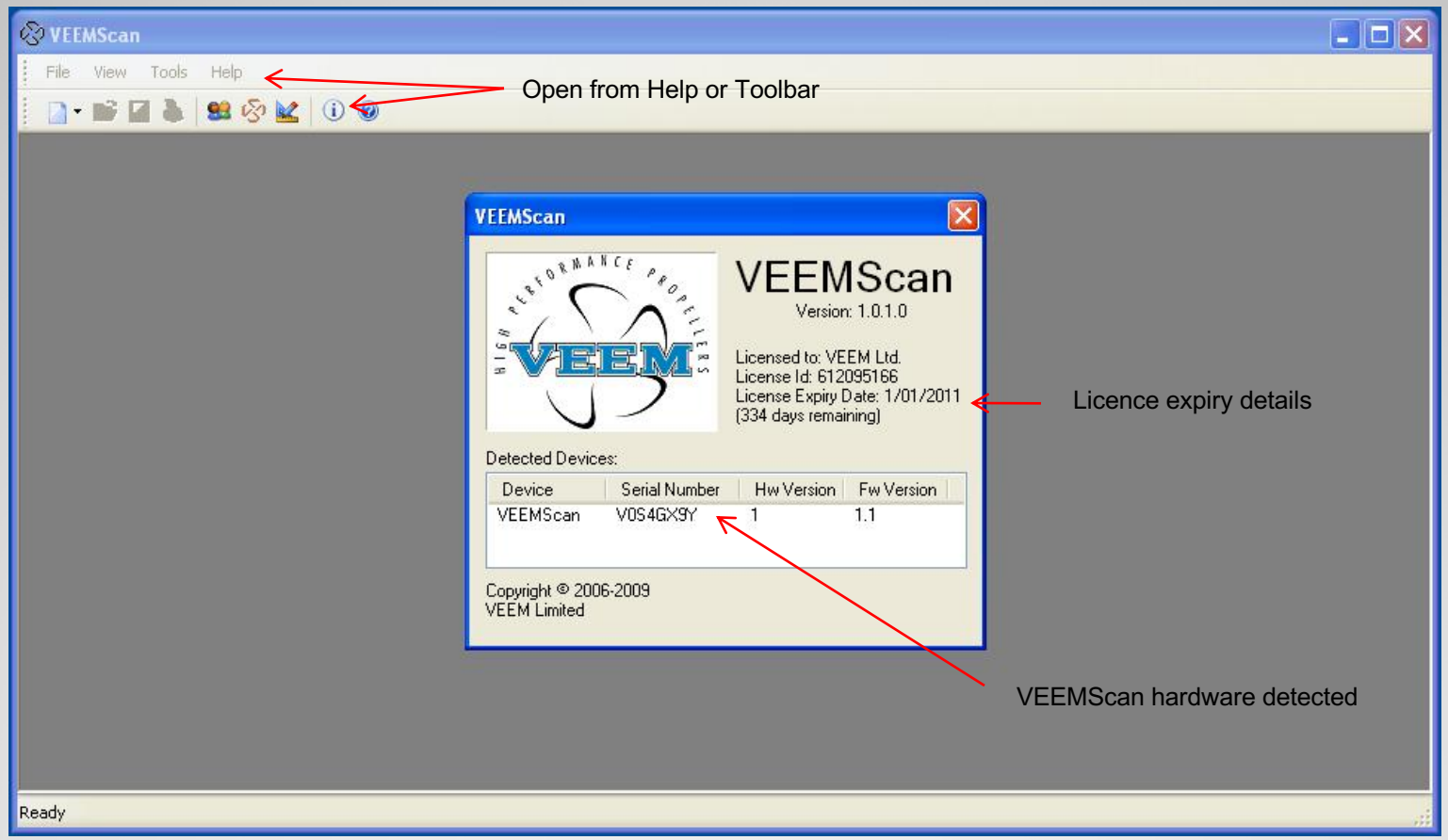
VEEMScan Software Overview

- VEEMScan application main screen



VEEMScan Software Details

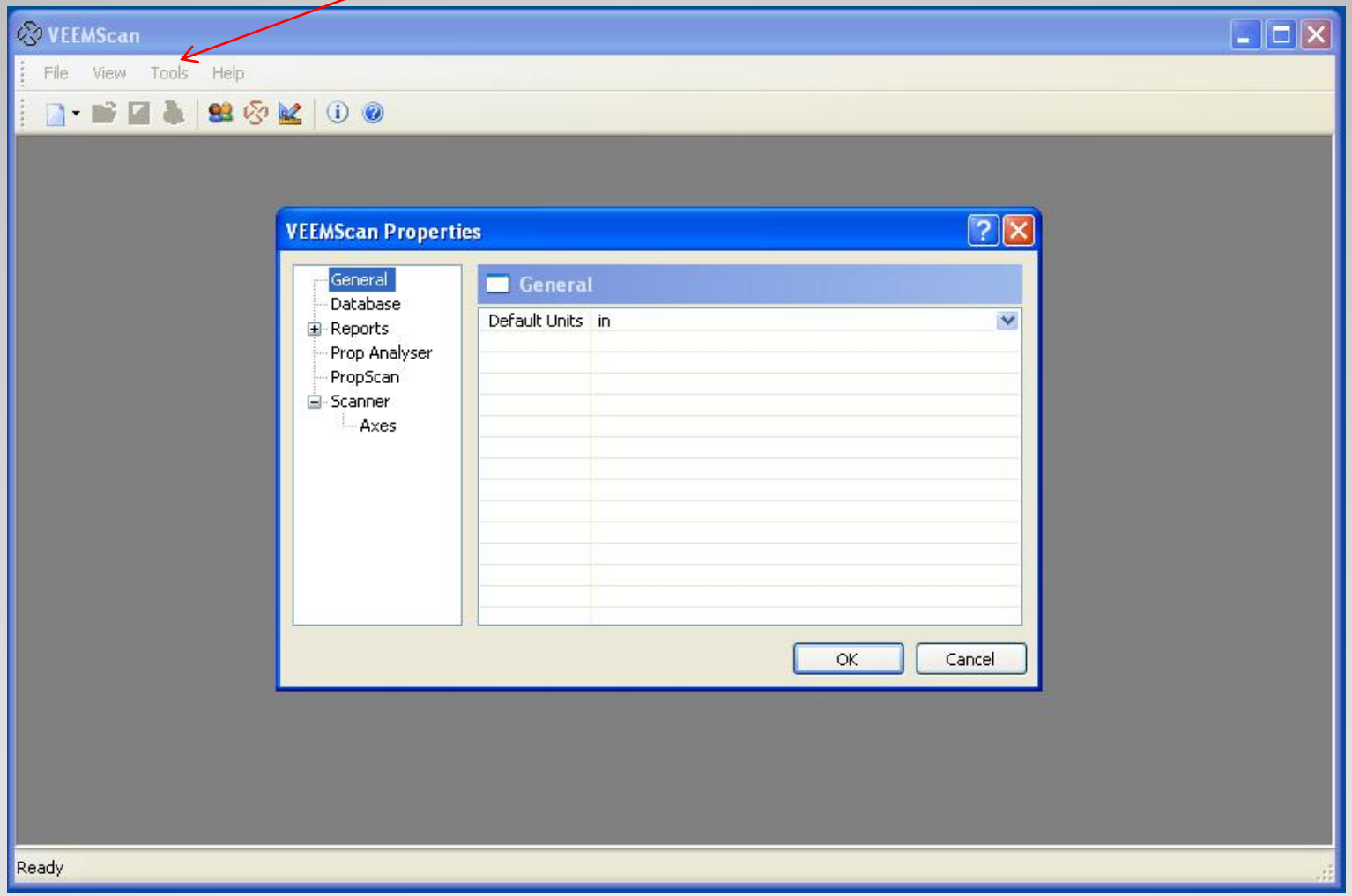
- Version, licence and hardware information



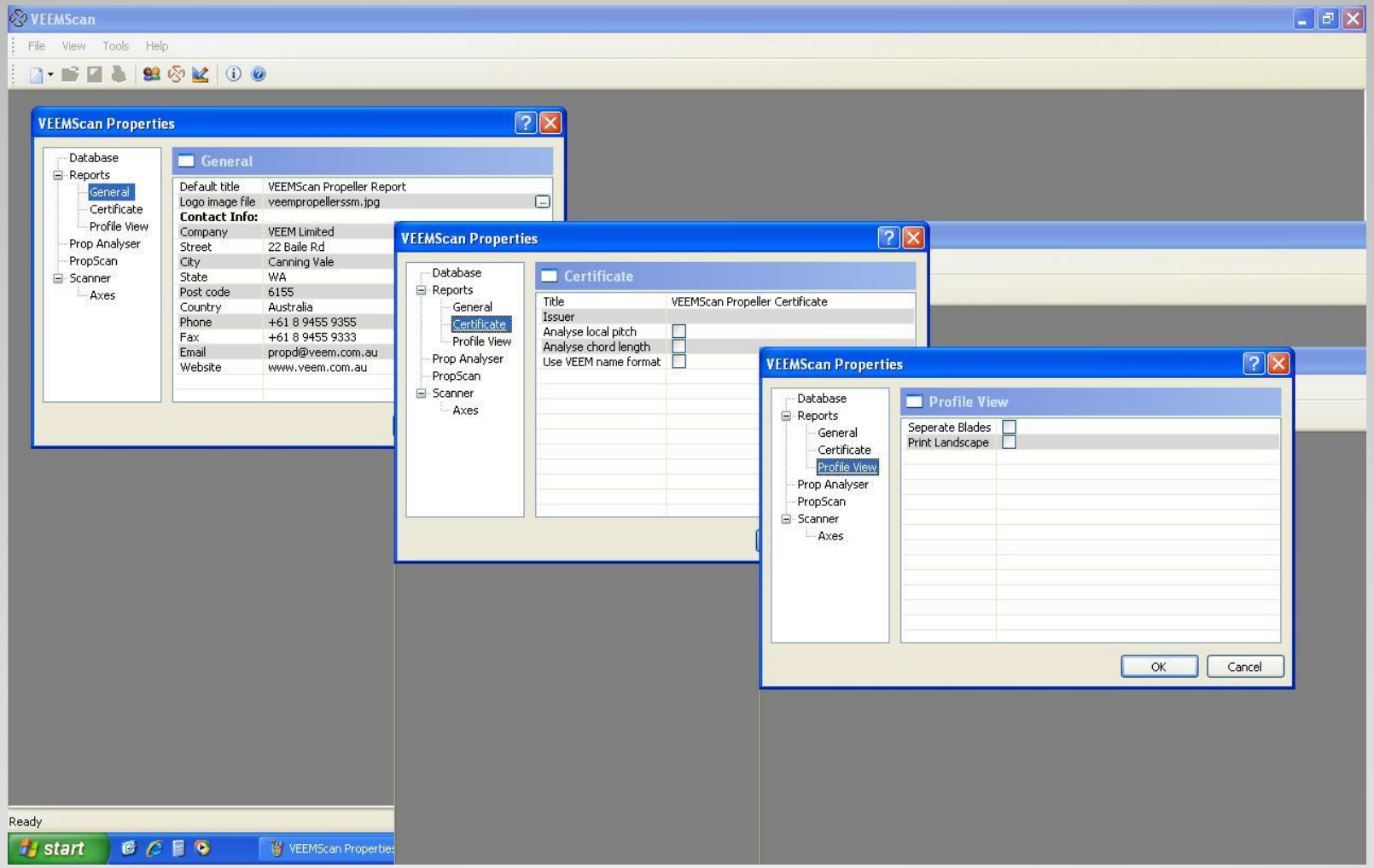
VEEMScan – About

- Configuration “Properties” pages
  - Define defaults (units, etc.)
  - Specify data source (database, account, etc.)
  - Define user details for reporting
  - Specify company logo
  - Define report contents and format
  - Define geometry analysis principles
  - Define import location and properties
  - Setup of measuring system arrangement
  - Specify measuring system resolution
  - Allocate button function

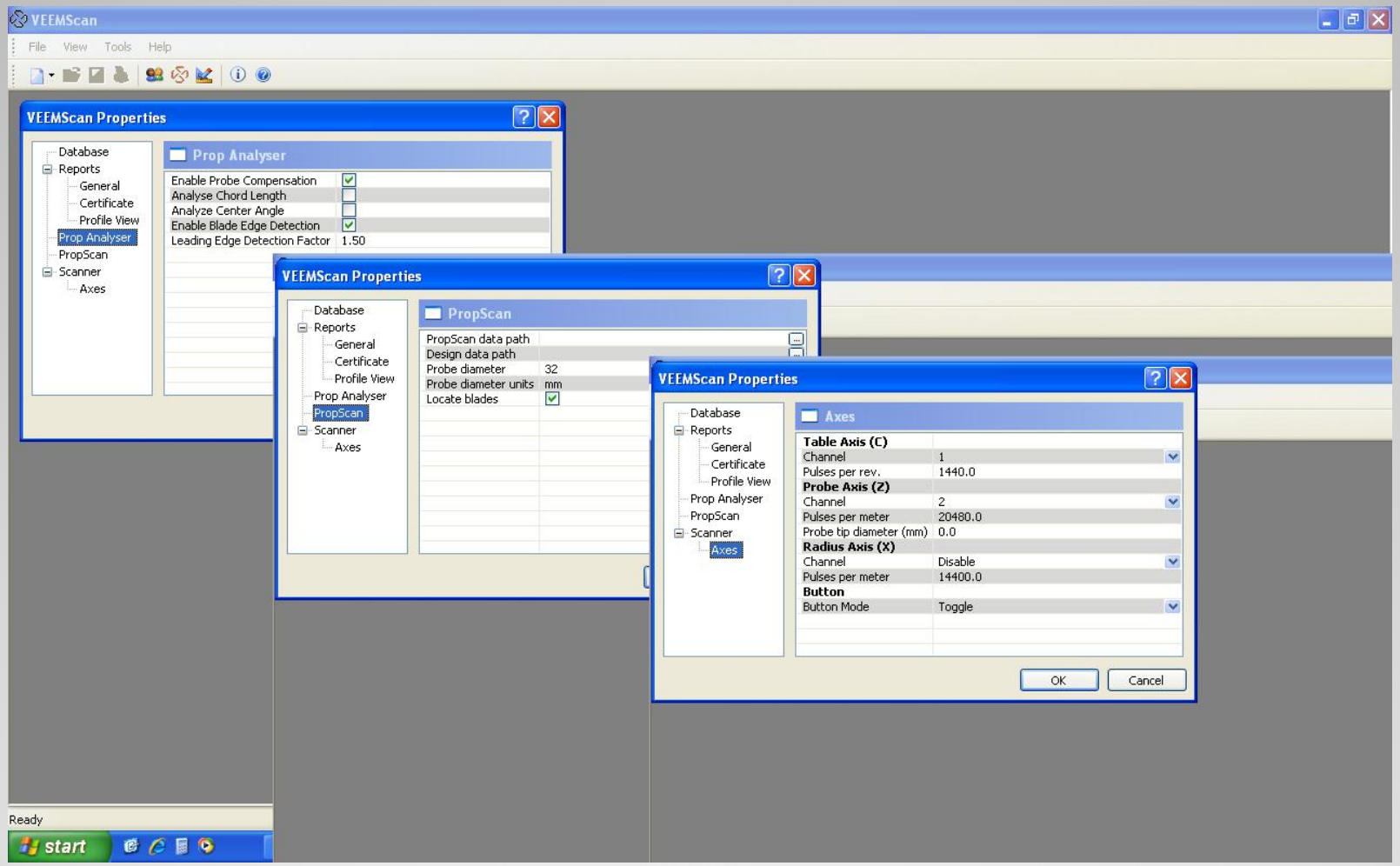
VEEMScan Configuration



VEEMScan - Properties



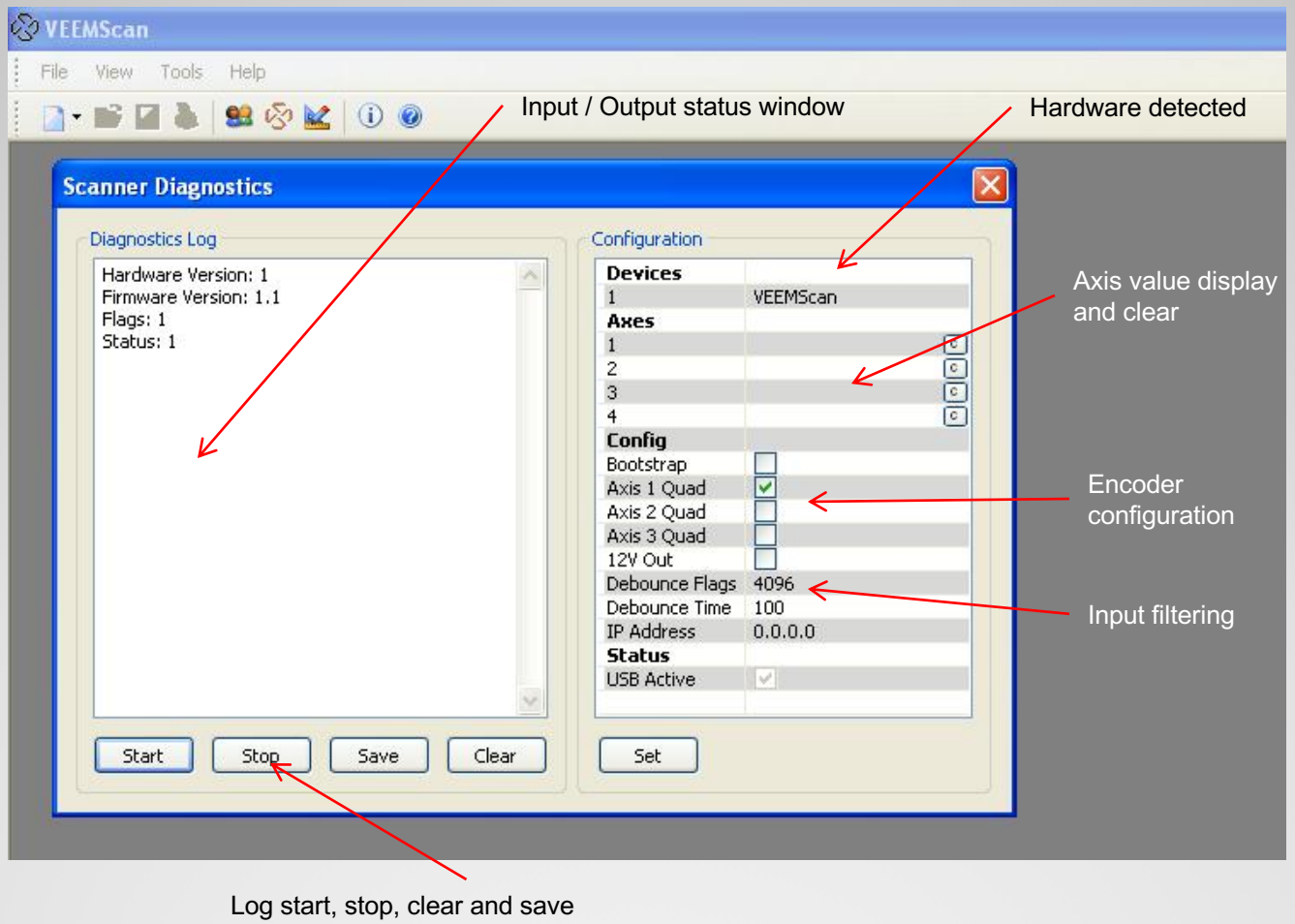
VEEMScan - Properties



VEEMScan – Properties

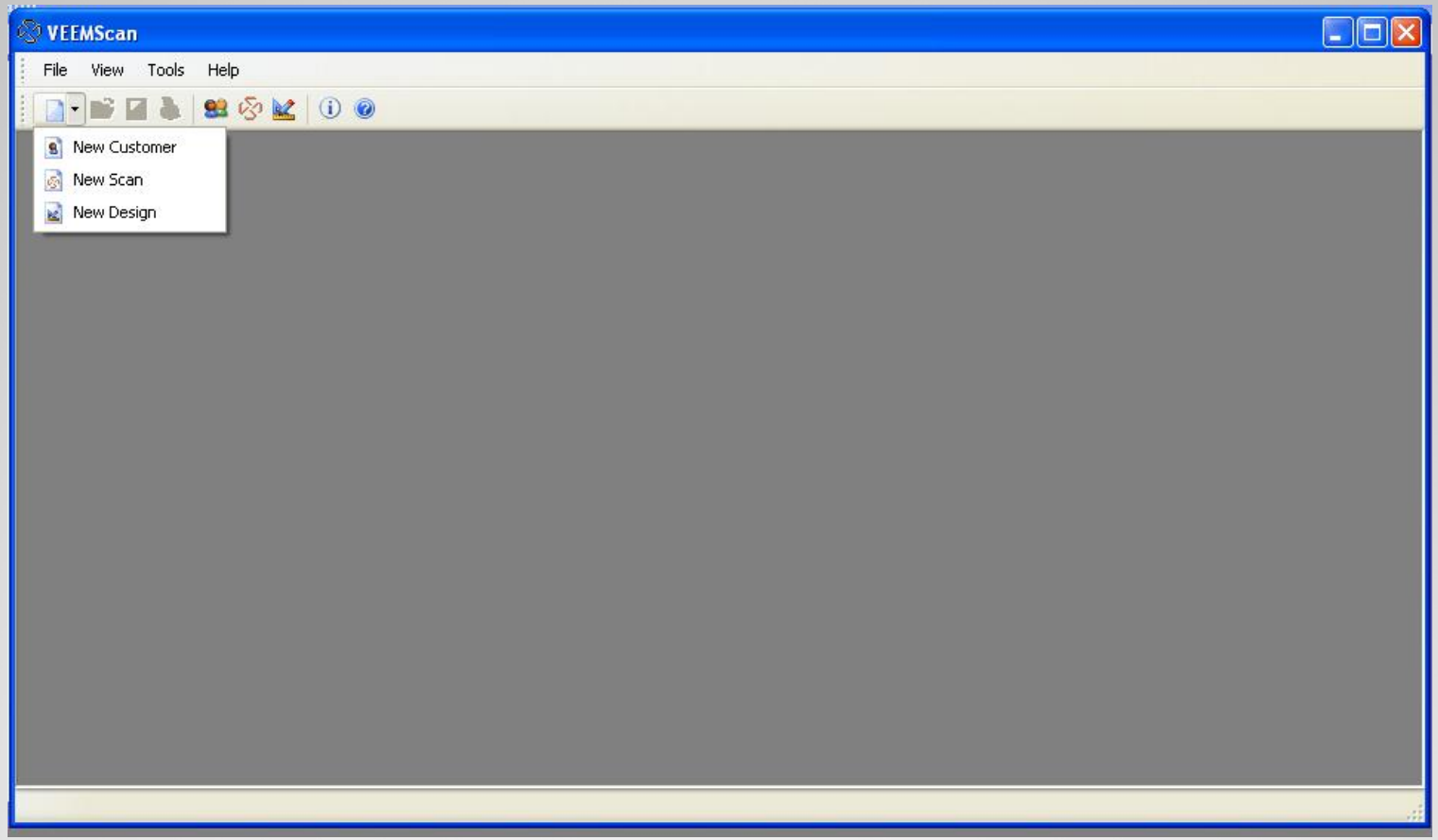
- Measuring system hardware detection
- Measuring system hardware configuration
- Data display for measuring system testing
- Input filtering
- Data capture for factory assistance

VEEMScan – Scanner Diagnostics

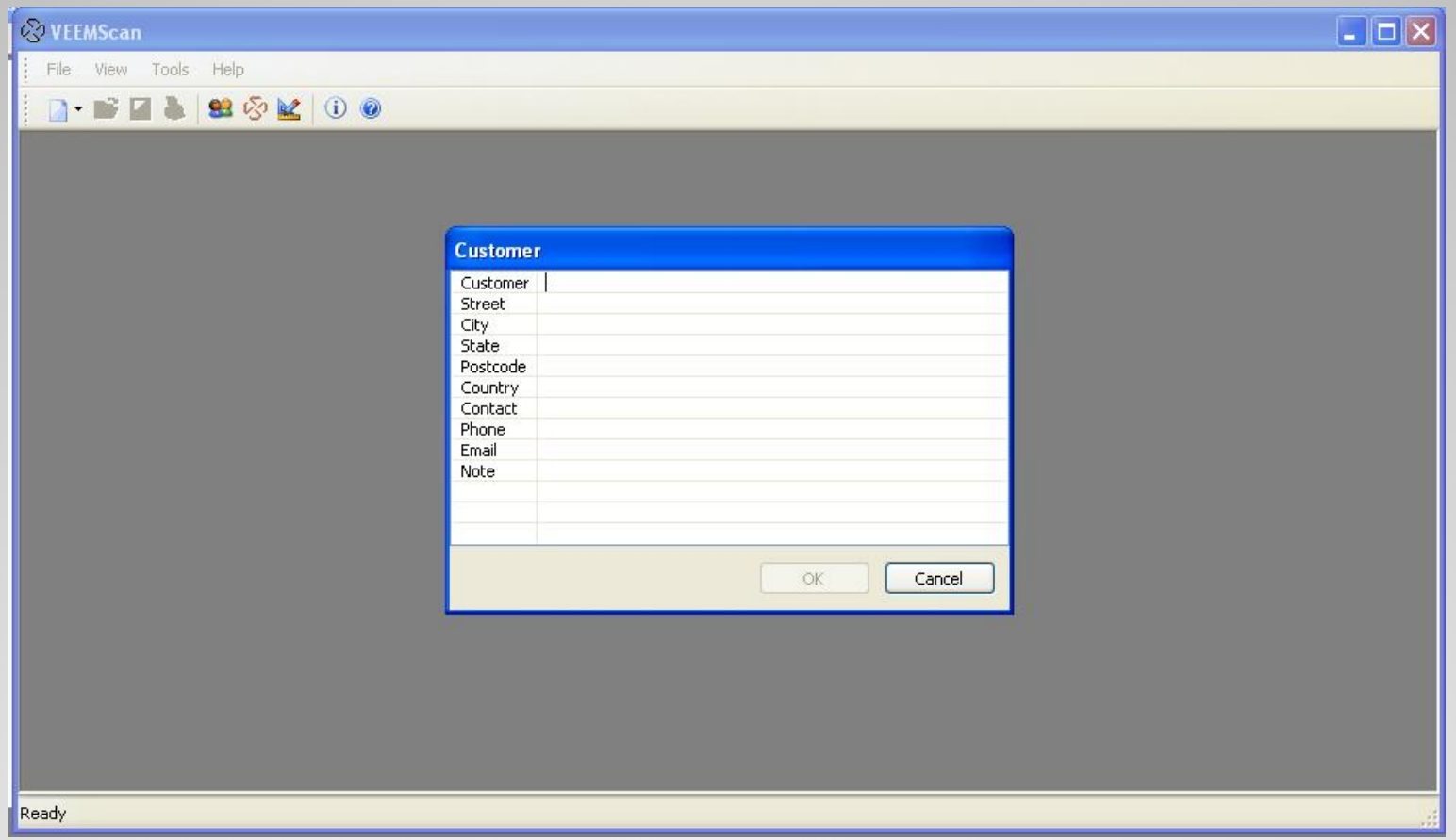


VEEMScan – Scanner Diagnostics

- Create new customer, scan or design

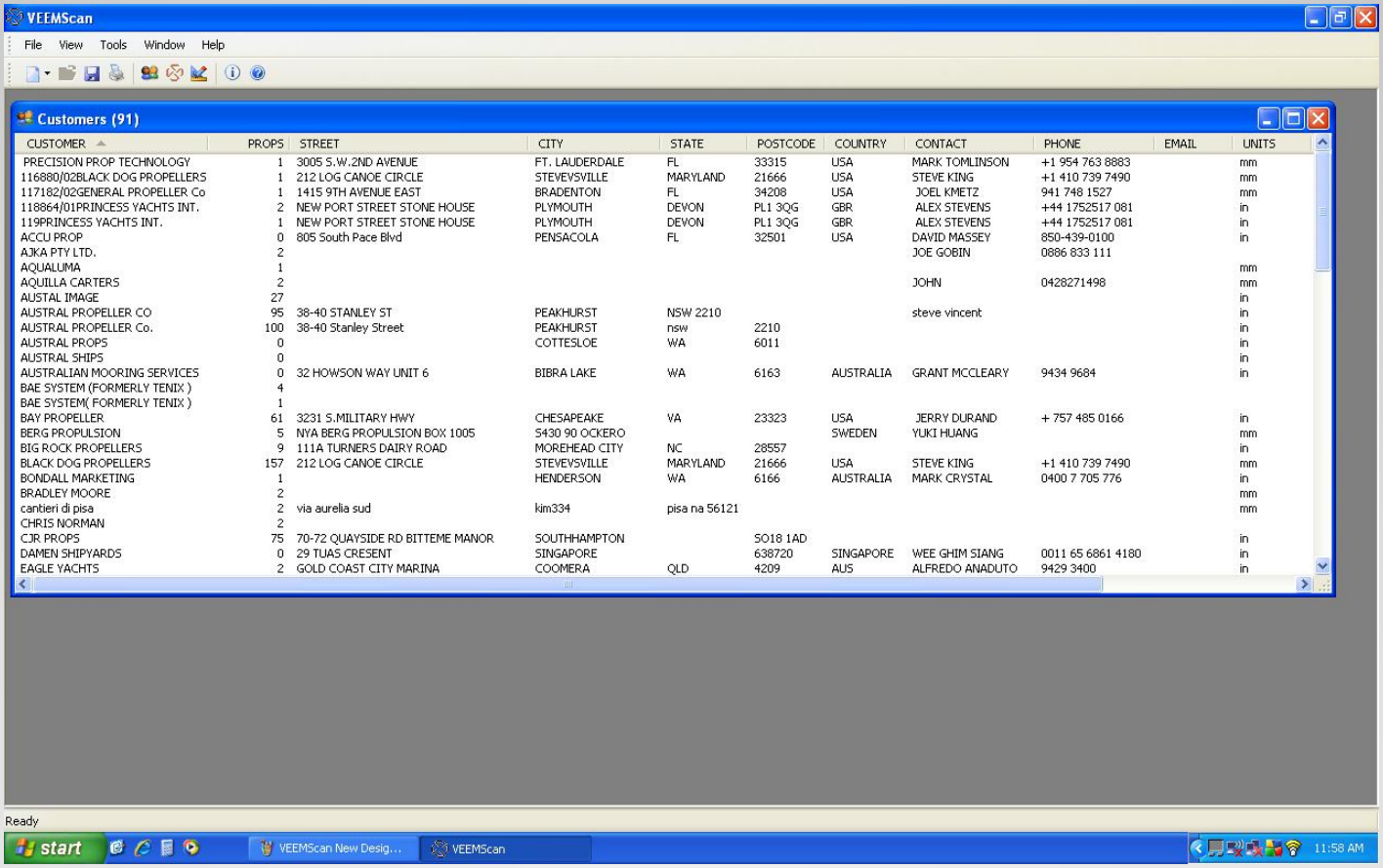


VEEMScan – New Toolbar



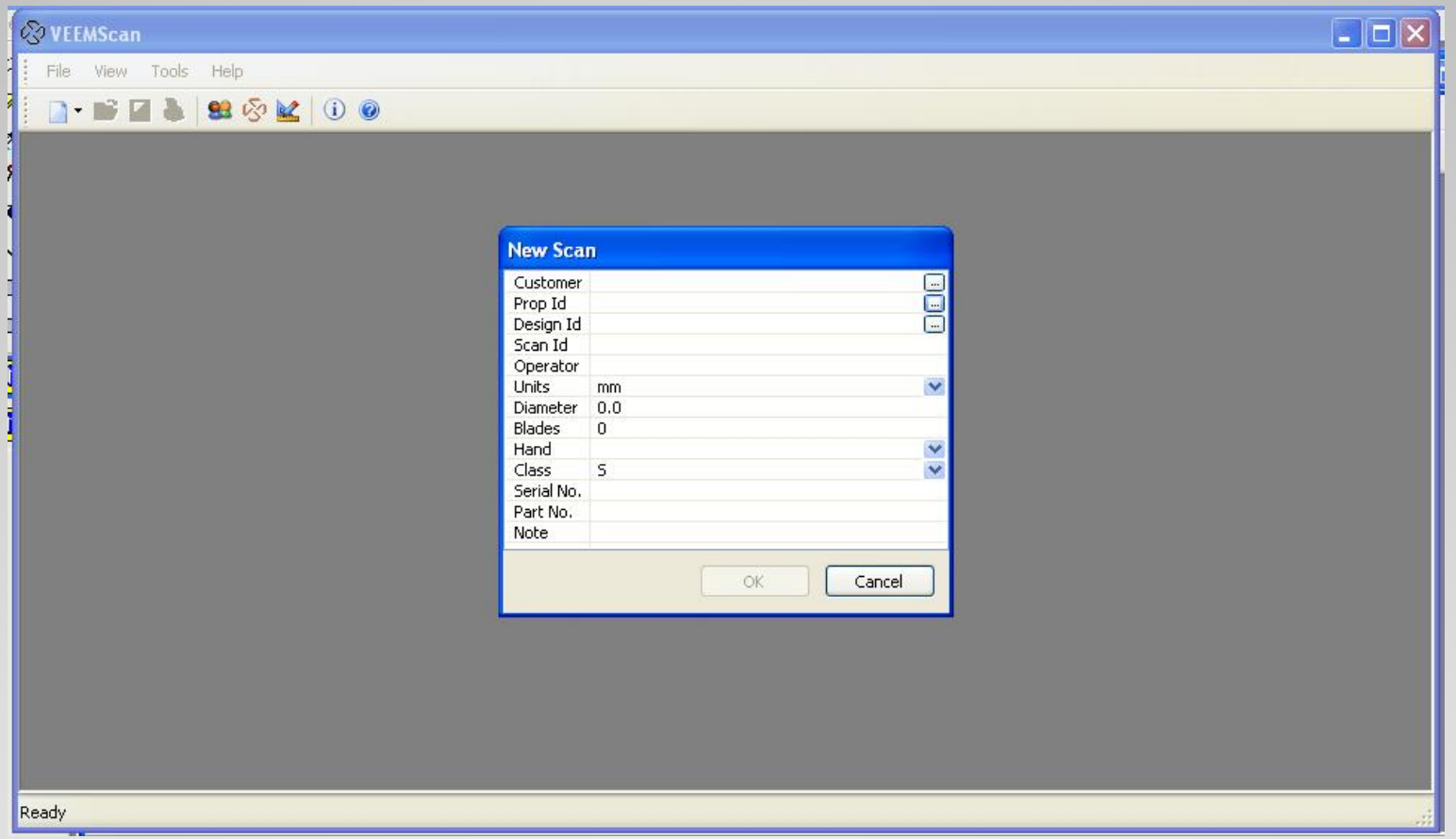
VEEMScan – Customer Details

- Customer data is held in the database and is re-useable for subsequent jobs

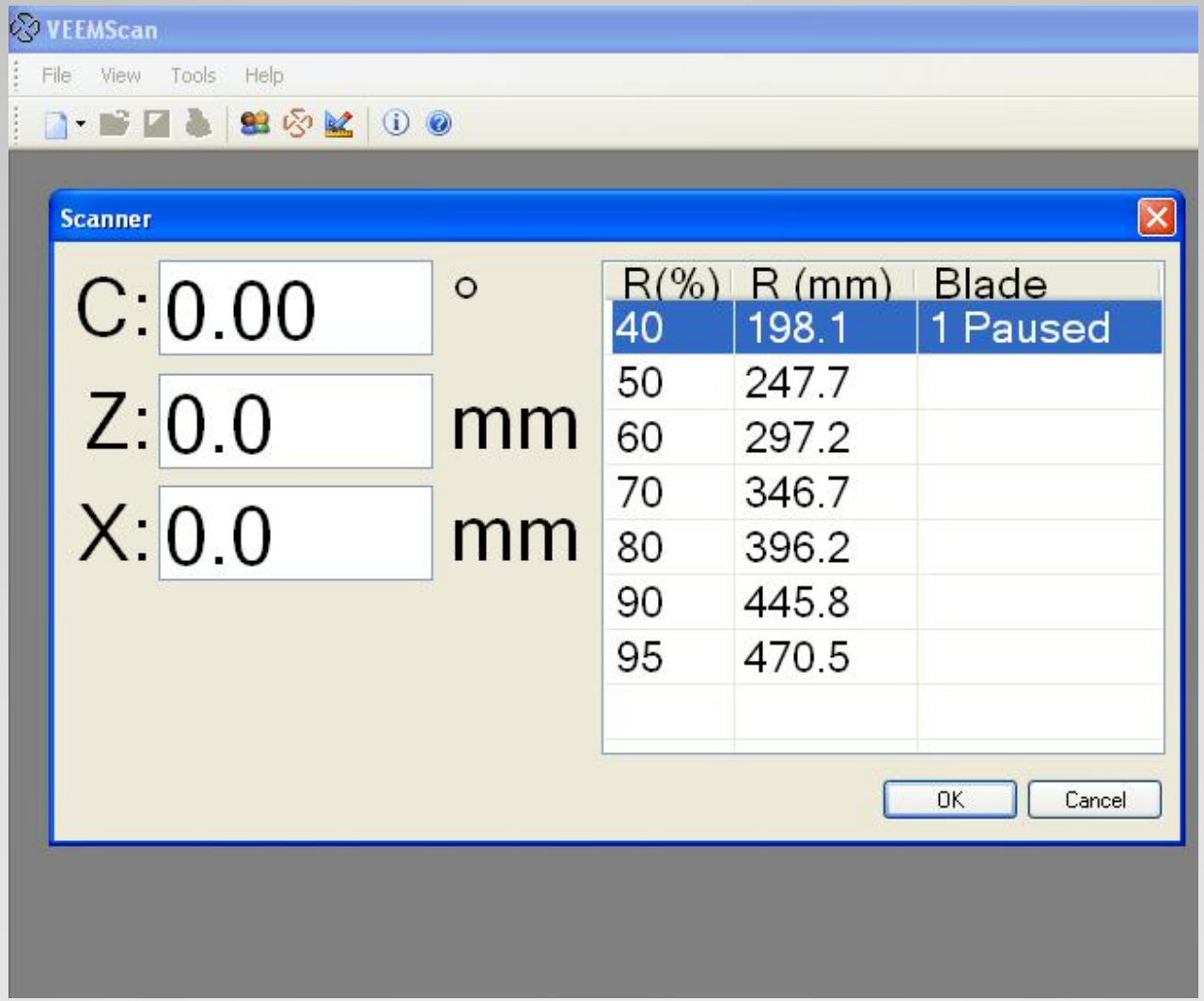


CUSTOMER	PROPS	STREET	CITY	STATE	POSTCODE	COUNTRY	CONTACT	PHONE	EMAIL	UNITS
PRECISION PROP TECHNOLOGY	1	3005 S.W.2ND AVENUE	FT. LAUDERDALE	FL	33315	USA	MARK TOMLINSON	+1 954 763 8883		mm
116880/02BLACK DOG PROPELLERS	1	212 LOG CANOE CIRCLE	STEVEVSVILLE	MARYLAND	21666	USA	STEVE KING	+1 410 739 7490		mm
117182/02GENERAL PROPELLER Co	1	1415 9TH AVENUE EAST	BRADENTON	FL	34208	USA	JOEL KMETZ	941 748 1527		mm
118864/01PRINCESS YACHTS INT.	2	NEW PORT STREET STONE HOUSE	PLYMOUTH	DEVON	PL1 3QG	GBR	ALEX STEVENS	+44 1752517 081		in
119PRINCESS YACHTS INT.	1	NEW PORT STREET STONE HOUSE	PLYMOUTH	DEVON	PL1 3QG	GBR	ALEX STEVENS	+44 1752517 081		in
ACCU PROP	0	805 South Pace Blvd	PENSACOLA	FL	32501	USA	DAVID MASSEY	850-439-0100		in
AJKA PTY LTD.	2						JOE GOBIN	0886 833 111		
AQUALUMA	1									mm
AQUILLA CARTERS	2						JOHN	0428271498		mm
AUSTAL IMAGE	27									in
AUSTRAL PROPELLER CO	95	38-40 STANLEY ST	PEAKHURST	NSW 2210			steve vincent			in
AUSTRAL PROPELLER Co.	100	38-40 Stanley Street	PEAKHURST	nsw	2210					in
AUSTRAL PROPS	0		COTTESLOE	WA	6011					in
AUSTRAL SHIPS	0									in
AUSTRALIAN MOORING SERVICES	0	32 HOWSON WAY UNIT 6	BIBRA LAKE	WA	6163	AUSTRALIA	GRANT MCCLEARY	9434 9684		in
BAE SYSTEM (FORMERLY TENIX)	4									
BAE SYSTEM(FORMERLY TENIX)	1									
BAY PROPELLER	61	3231 S.MILITARY HWY	CHESAPEAKE	VA	23323	USA	JERRY DURAND	+ 757 485 0166		in
BERG PROPULSION	5	NYA BERG PROPULSION BOX 1005	5430 90 OCKERO			SWEDEN	YUKI HUANG			mm
BIG ROCK PROPELLERS	9	111A TURNERS DAIRY ROAD	MOREHEAD CITY	NC	28557					in
BLACK DOG PROPELLERS	157	212 LOG CANOE CIRCLE	STEVEVSVILLE	MARYLAND	21666	USA	STEVE KING	+1 410 739 7490		mm
BONDALL MARKETING	1		HENDERSON	WA	6166	AUSTRALIA	MARK CRYSTAL	0400 7 705 776		in
BRADLEY MOORE	2									mm
cantieri di pisa	2	via aurelia sud	kim334	pisa na 56121						mm
CHRIS NORMAN	2									
CJR PROPS	75	70-72 QUAYSIDE RD BITTEME MANOR	SOUTHHAMPTON		SO18 1AD					in
DAMEN SHIPYARDS	0	29 TUAS CRESENT	SINGAPORE		638720	SINGAPORE	WEE GHIM SIANG	0011 65 6861 4180		in
EAGLE YACHTS	2	GOLD COAST CITY MARINA	COOMERA	QLD	4209	AUS	ALFREDO ANADUTO	9429 3400		in

VEEMScan – Customer Data

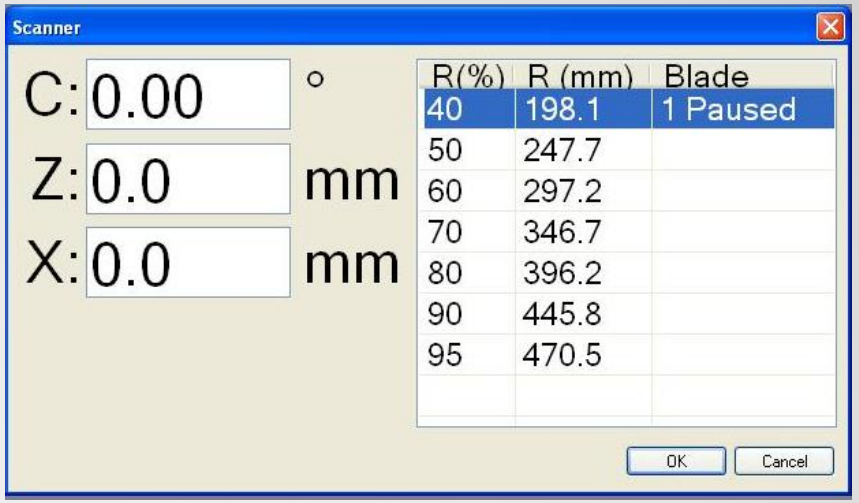


VEEMScan – New Scan Details

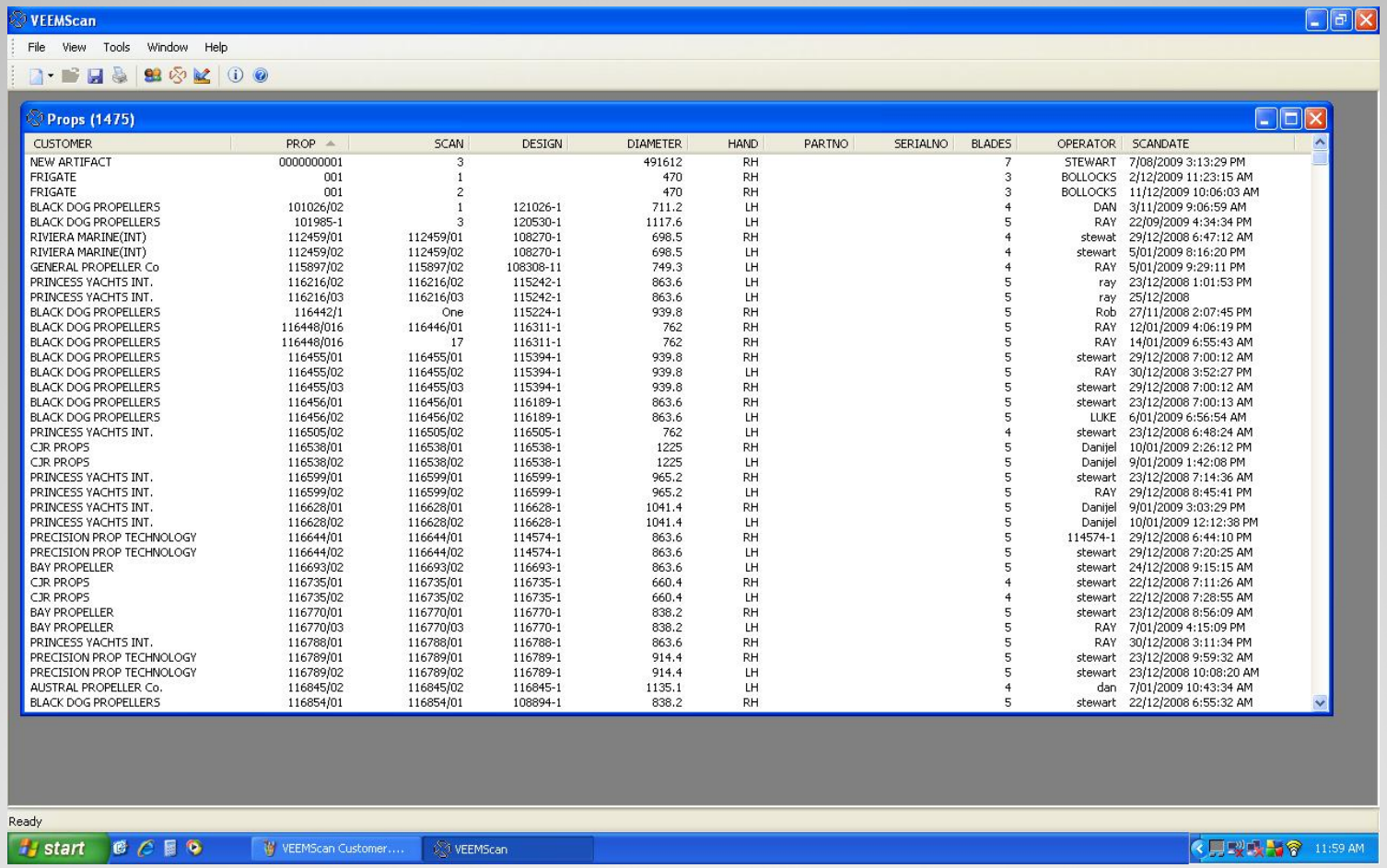


VEEMScan - Scan

- Press button to start scan, press button to pause
- Rescan radius by reselecting
- Number of blades determined from data entry
- Live measure system position display
- Radial position prompt



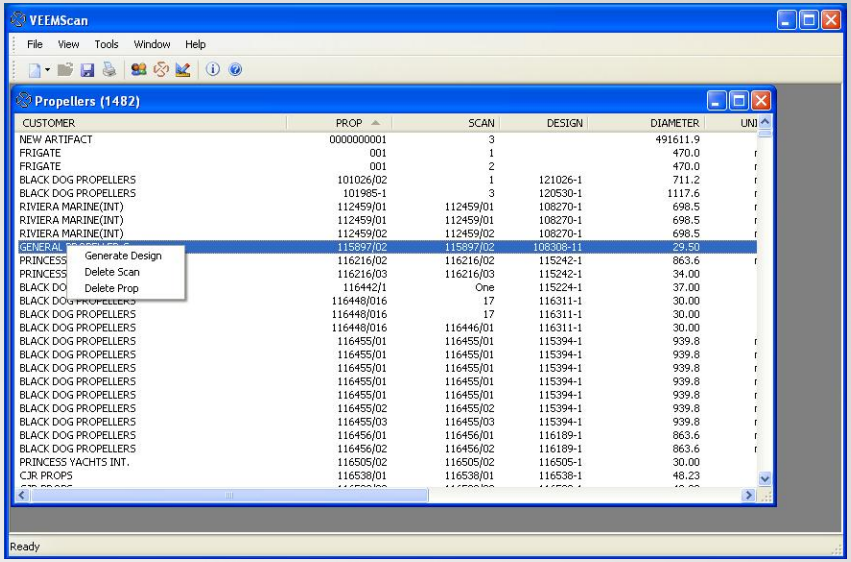
VEEMScan - Scan



CUSTOMER	PROP	SCAN	DESIGN	DIAMETER	HAND	PARTNO	SERIALNO	BLADES	OPERATOR	SCANDATE
NEW ARTIFACT	0000000001	3		491612	RH			7	STEWART	7/08/2009 3:13:29 PM
FRIGATE	001	1		470	RH			3	BOLLOCKS	2/12/2009 11:23:15 AM
FRIGATE	001	2		470	RH			3	BOLLOCKS	11/12/2009 10:06:03 AM
BLACK DOG PROPELLERS	101026/02	1	121026-1	711.2	LH			4	DAN	3/11/2009 9:06:59 AM
BLACK DOG PROPELLERS	101985-1	3	120530-1	1117.6	LH			5	RAY	22/09/2009 4:34:34 PM
RIVIERA MARINE(INT)	112459/01	112459/01	108270-1	698.5	RH			4	stewat	29/12/2008 6:47:12 AM
RIVIERA MARINE(INT)	112459/02	112459/02	108270-1	698.5	LH			4	stewart	5/01/2009 8:16:20 PM
GENERAL PROPELLER Co	115897/02	115897/02	108308-11	749.3	LH			4	RAY	5/01/2009 9:29:11 PM
PRINCESS YACHTS INT.	116216/02	116216/02	115242-1	863.6	LH			5	ray	23/12/2008 1:01:53 PM
PRINCESS YACHTS INT.	116216/03	116216/03	115242-1	863.6	LH			5	ray	25/12/2008
BLACK DOG PROPELLERS	116442/1	One	115224-1	939.8	RH			5	Rob	27/11/2008 2:07:45 PM
BLACK DOG PROPELLERS	116448/016	116446/01	116311-1	762	RH			5	RAY	12/01/2009 4:06:19 PM
BLACK DOG PROPELLERS	116448/016	17	116311-1	762	RH			5	RAY	14/01/2009 6:55:43 AM
BLACK DOG PROPELLERS	116455/01	116455/01	115394-1	939.8	RH			5	stewart	29/12/2008 7:00:12 AM
BLACK DOG PROPELLERS	116455/02	116455/02	115394-1	939.8	LH			5	RAY	30/12/2008 3:52:27 PM
BLACK DOG PROPELLERS	116455/03	116455/03	115394-1	939.8	RH			5	stewart	29/12/2008 7:00:12 AM
BLACK DOG PROPELLERS	116456/01	116456/01	116189-1	863.6	RH			5	stewart	23/12/2008 7:00:13 AM
BLACK DOG PROPELLERS	116456/02	116456/02	116189-1	863.6	LH			5	LUKE	6/01/2009 6:56:54 AM
PRINCESS YACHTS INT.	116505/02	116505/02	116505-1	762	LH			4	stewart	23/12/2008 6:48:24 AM
CJR PROPS	116538/01	116538/01	116538-1	1225	RH			5	Danijel	10/01/2009 2:26:12 PM
CJR PROPS	116538/02	116538/02	116538-1	1225	LH			5	Danijel	9/01/2009 1:42:08 PM
PRINCESS YACHTS INT.	116599/01	116599/01	116599-1	965.2	RH			5	stewart	23/12/2008 7:14:36 AM
PRINCESS YACHTS INT.	116599/02	116599/02	116599-1	965.2	LH			5	RAY	29/12/2008 8:45:41 PM
PRINCESS YACHTS INT.	116628/01	116628/01	116628-1	1041.4	RH			5	Danijel	9/01/2009 3:03:29 PM
PRINCESS YACHTS INT.	116628/02	116628/02	116628-1	1041.4	LH			5	Danijel	10/01/2009 12:12:38 PM
PRECISION PROP TECHNOLOGY	116644/01	116644/01	114574-1	863.6	RH			5	114574-1	29/12/2008 6:44:10 PM
PRECISION PROP TECHNOLOGY	116644/02	116644/02	114574-1	863.6	LH			5	stewart	29/12/2008 7:20:25 AM
BAY PROPELLER	116693/02	116693/02	116693-1	863.6	LH			5	stewart	24/12/2008 9:15:15 AM
CJR PROPS	116735/01	116735/01	116735-1	660.4	RH			4	stewart	22/12/2008 7:11:26 AM
CJR PROPS	116735/02	116735/02	116735-1	660.4	LH			4	stewart	22/12/2008 7:28:55 AM
BAY PROPELLER	116770/01	116770/01	116770-1	838.2	RH			5	stewart	23/12/2008 8:56:09 AM
BAY PROPELLER	116770/03	116770/03	116770-1	838.2	LH			5	RAY	7/01/2009 4:15:09 PM
PRINCESS YACHTS INT.	116788/01	116788/01	116788-1	863.6	RH			5	RAY	30/12/2008 3:11:34 PM
PRECISION PROP TECHNOLOGY	116789/01	116789/01	116789-1	914.4	RH			5	stewart	23/12/2008 9:59:32 AM
PRECISION PROP TECHNOLOGY	116789/02	116789/02	116789-1	914.4	LH			5	stewart	23/12/2008 10:08:20 AM
AUSTRAL PROPELLER Co.	116845/02	116845/02	116845-1	1135.1	LH			4	dan	7/01/2009 10:43:34 AM
BLACK DOG PROPELLERS	116854/01	116854/01	108894-1	838.2	RH			5	stewart	22/12/2008 6:55:32 AM

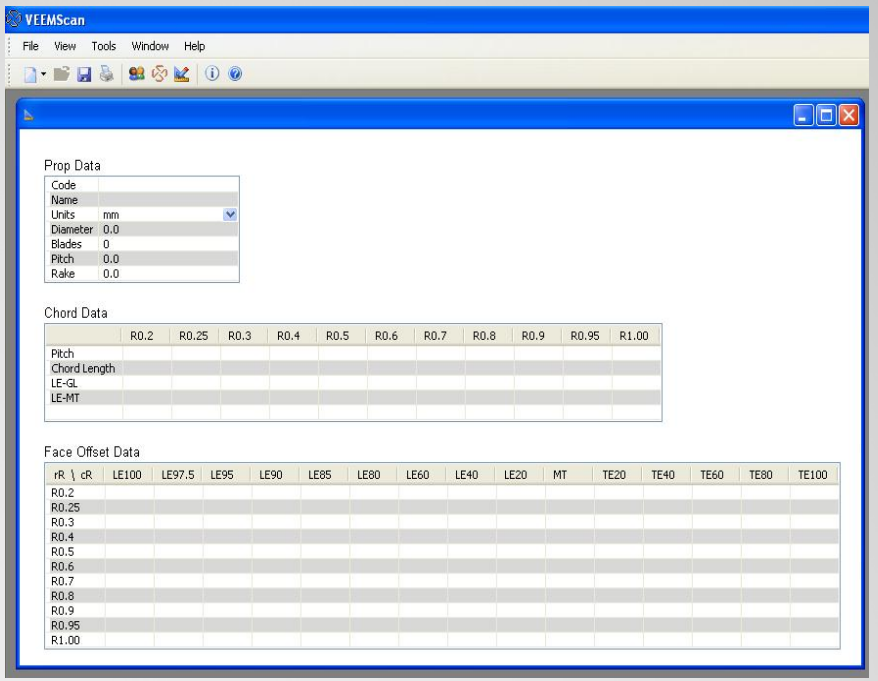
VEEMScan – Propeller Scan Data

- Scan data is stored to create propeller records
  - Multiple scans per propeller
  - Select a record, double click to view, edit or rescan
  - Right click menu to
    - Create a design
    - Delete a scan
    - Delete a propeller
  - Click titles to sort
  - Multiple scans open



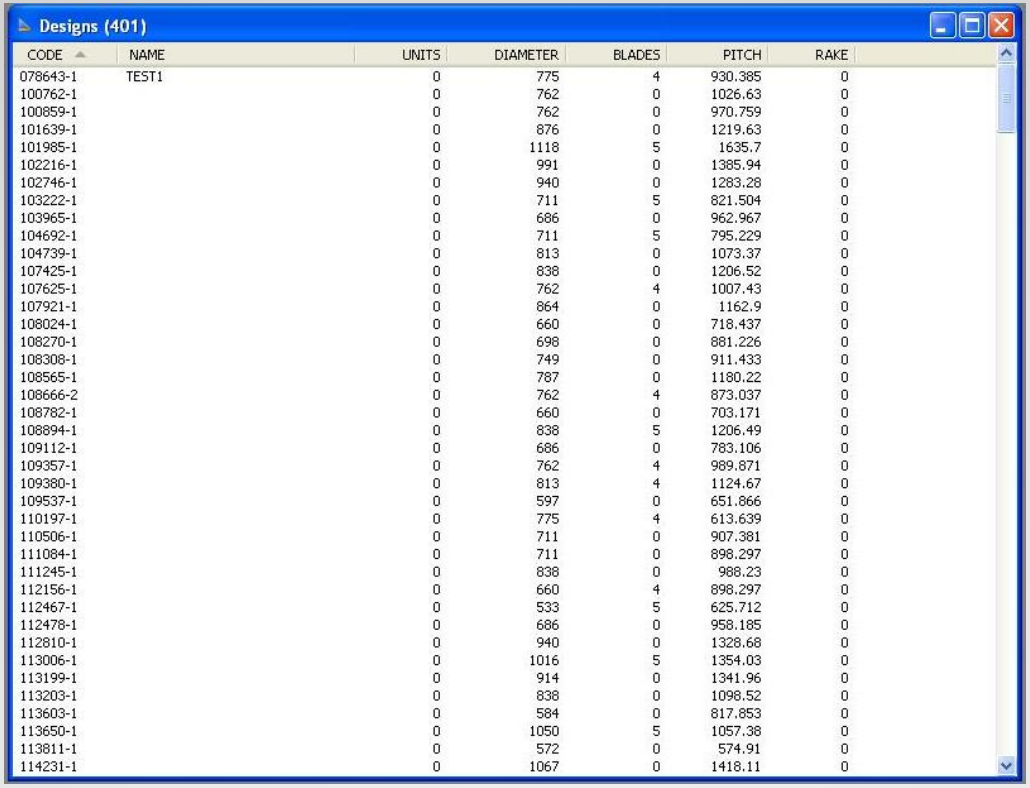
VEEMScan – Propeller Data

- New design data can be entered directly based on regular propeller geometry definition principals.
- Design data can also be automatically generated
  - based on existing scan
  - imported via file or web
  - imported from other application



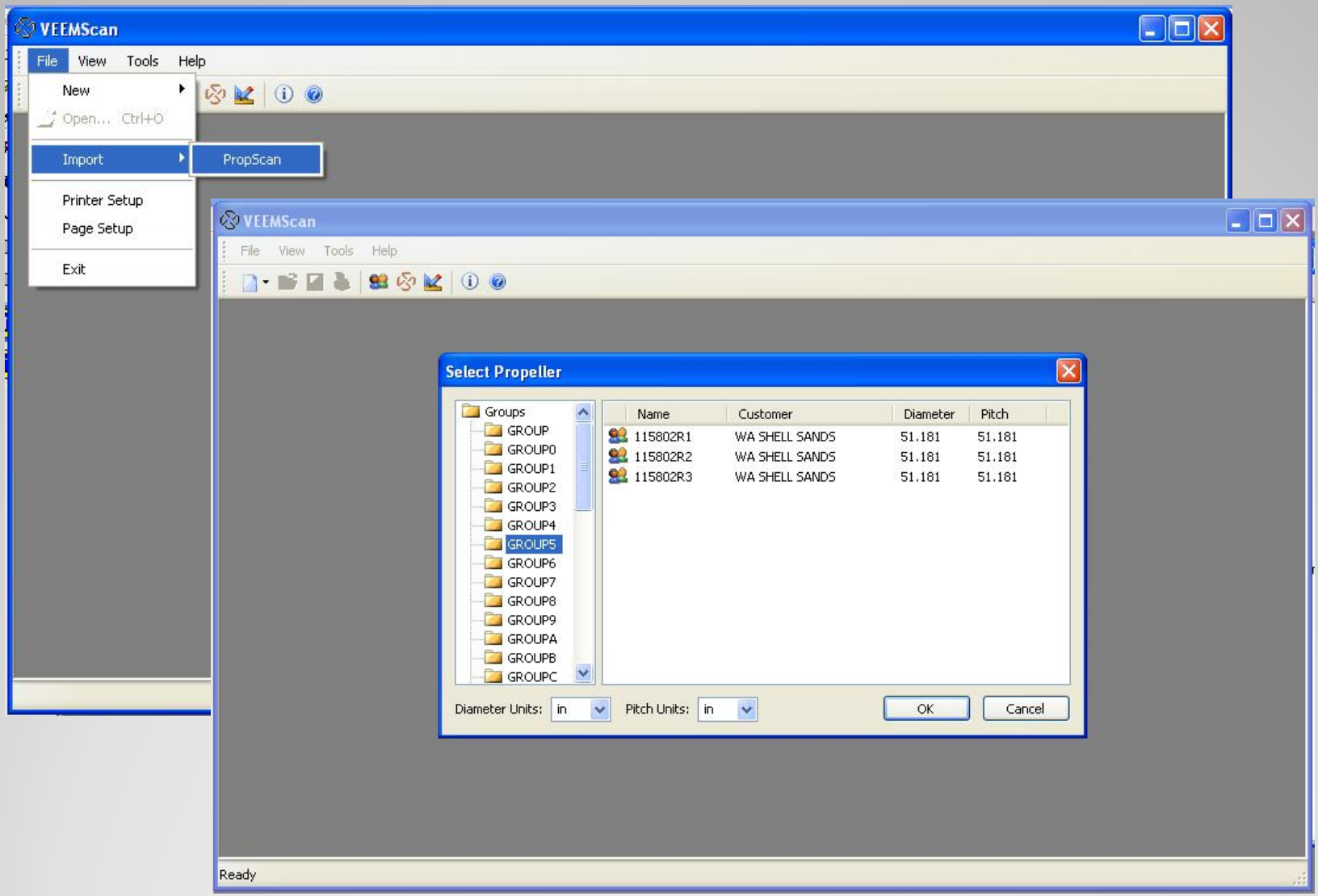
VEEMScan - Design

- Retrieved and edit designs as required
  - Double click to open
  - Right click menu to delete



CODE	NAME	UNITS	DIAMETER	BLADES	PITCH	RAKE
078643-1	TEST1	0	775	4	930.385	0
100762-1		0	762	0	1026.63	0
100859-1		0	762	0	970.759	0
101639-1		0	876	0	1219.63	0
101985-1		0	1118	5	1635.7	0
102216-1		0	991	0	1385.94	0
102746-1		0	940	0	1283.28	0
103222-1		0	711	5	821.504	0
103965-1		0	686	0	962.967	0
104692-1		0	711	5	795.229	0
104739-1		0	813	0	1073.37	0
107425-1		0	838	0	1206.52	0
107625-1		0	762	4	1007.43	0
107921-1		0	864	0	1162.9	0
108024-1		0	660	0	718.437	0
108270-1		0	698	0	881.226	0
108308-1		0	749	0	911.433	0
108565-1		0	787	0	1180.22	0
108666-2		0	762	4	873.037	0
108782-1		0	660	0	703.171	0
108894-1		0	838	5	1206.49	0
109112-1		0	686	0	783.106	0
109357-1		0	762	4	989.871	0
109380-1		0	813	4	1124.67	0
109537-1		0	597	0	651.866	0
110197-1		0	775	4	613.639	0
110506-1		0	711	0	907.381	0
111084-1		0	711	0	898.297	0
111245-1		0	838	0	988.23	0
112156-1		0	660	4	898.297	0
112467-1		0	533	5	625.712	0
112478-1		0	686	0	958.185	0
112810-1		0	940	0	1328.68	0
113006-1		0	1016	5	1354.03	0
113199-1		0	914	0	1341.96	0
113203-1		0	838	0	1098.52	0
113603-1		0	584	0	817.853	0
113650-1		0	1050	5	1057.38	0
113811-1		0	572	0	574.91	0
114231-1		0	1067	0	1418.11	0

VEEMScan – Design Data

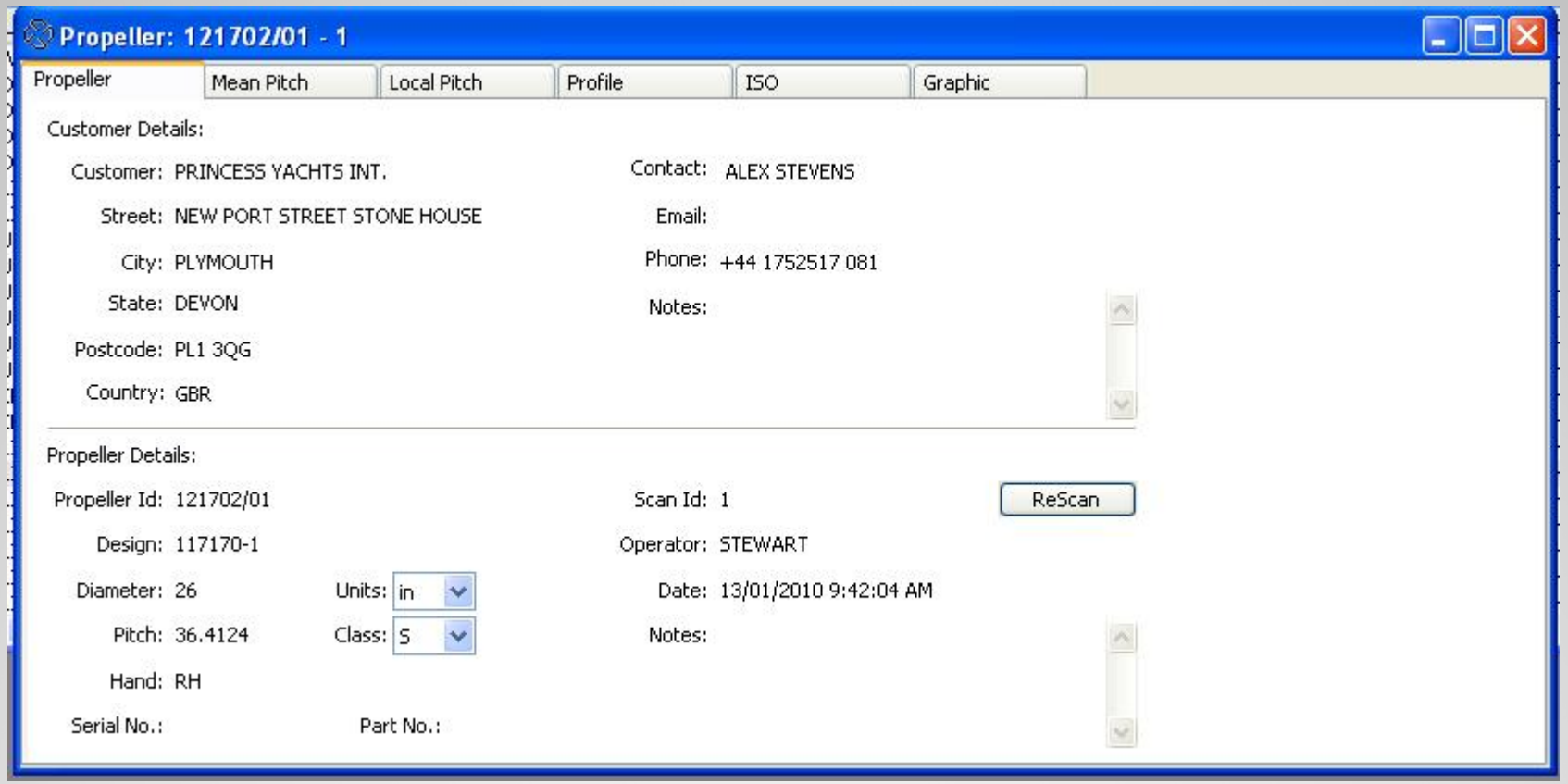


VEEMScan - Import

- Propeller scan information/details
- Radius, blade and mean pitch bar graph
- Local pitch bar graphs
- Profile plots with design and profile guides
  - Overlay or separate profiles
- Evaluation to ISO 484 class with graphic

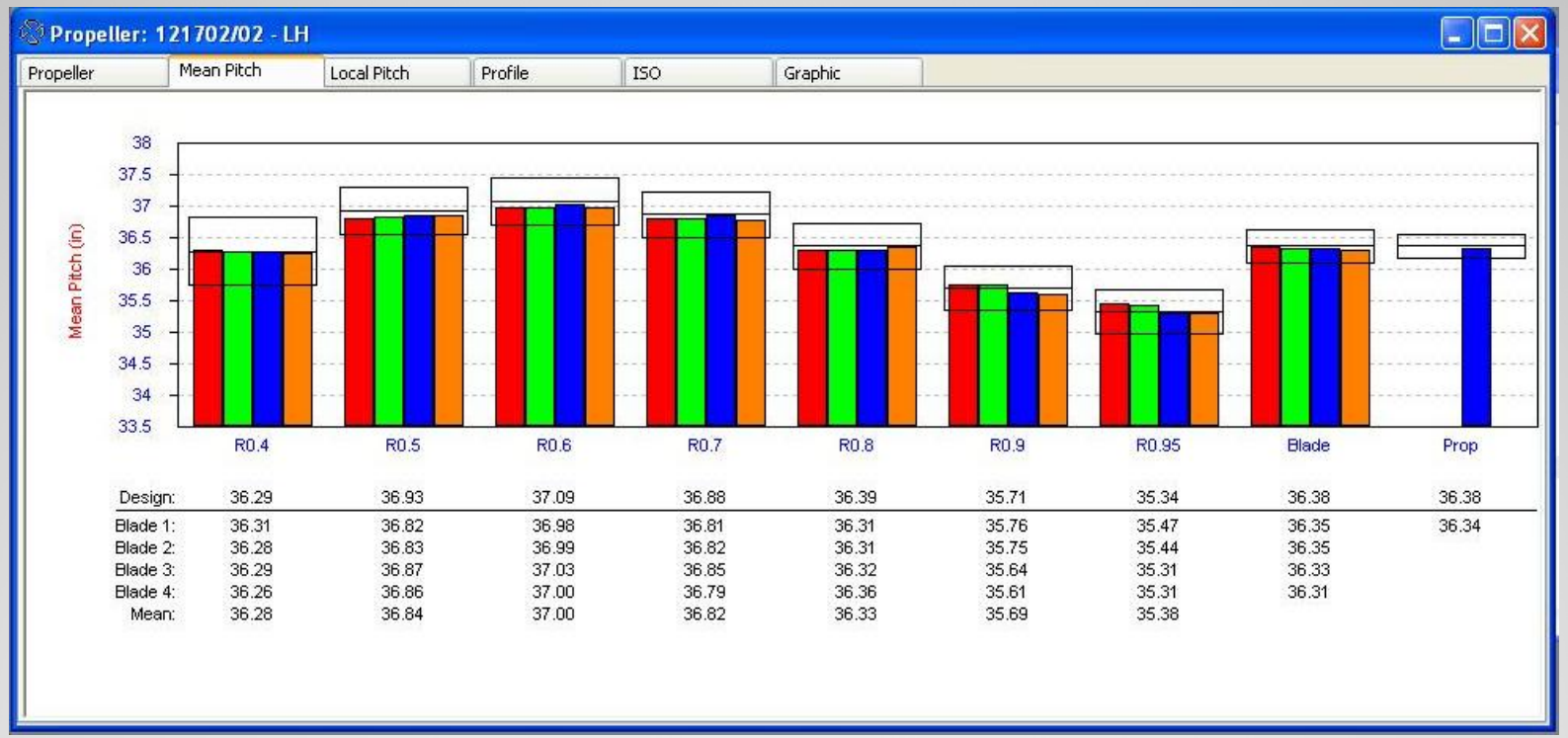
VEEMScan - Reporting

- Propeller scan details display



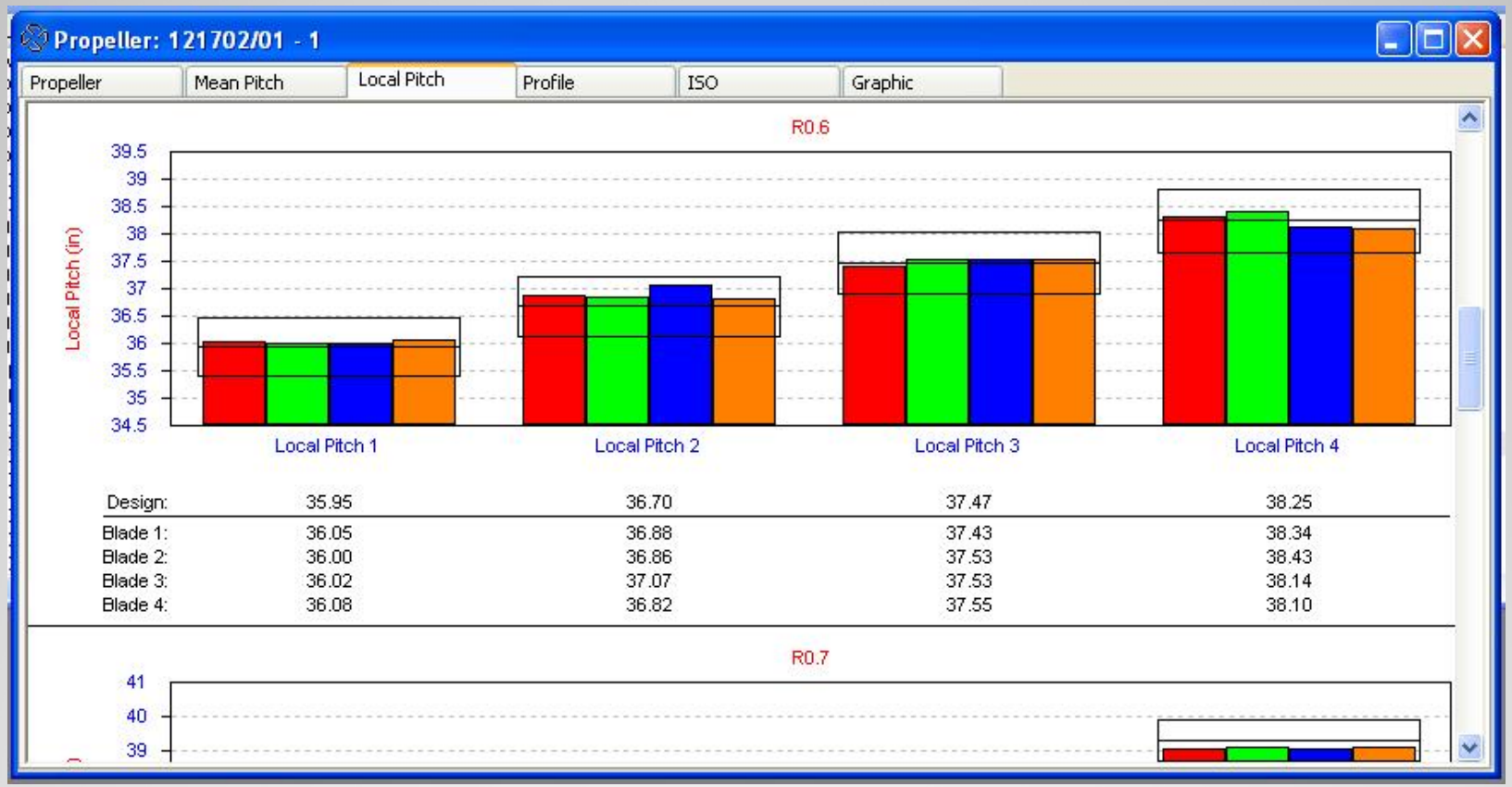
VEEMScan – Display Scan

- Familiar radius, blade and mean pitch display



VEEMScan – Display Scan

- Local pitch display according to ISO 484 class

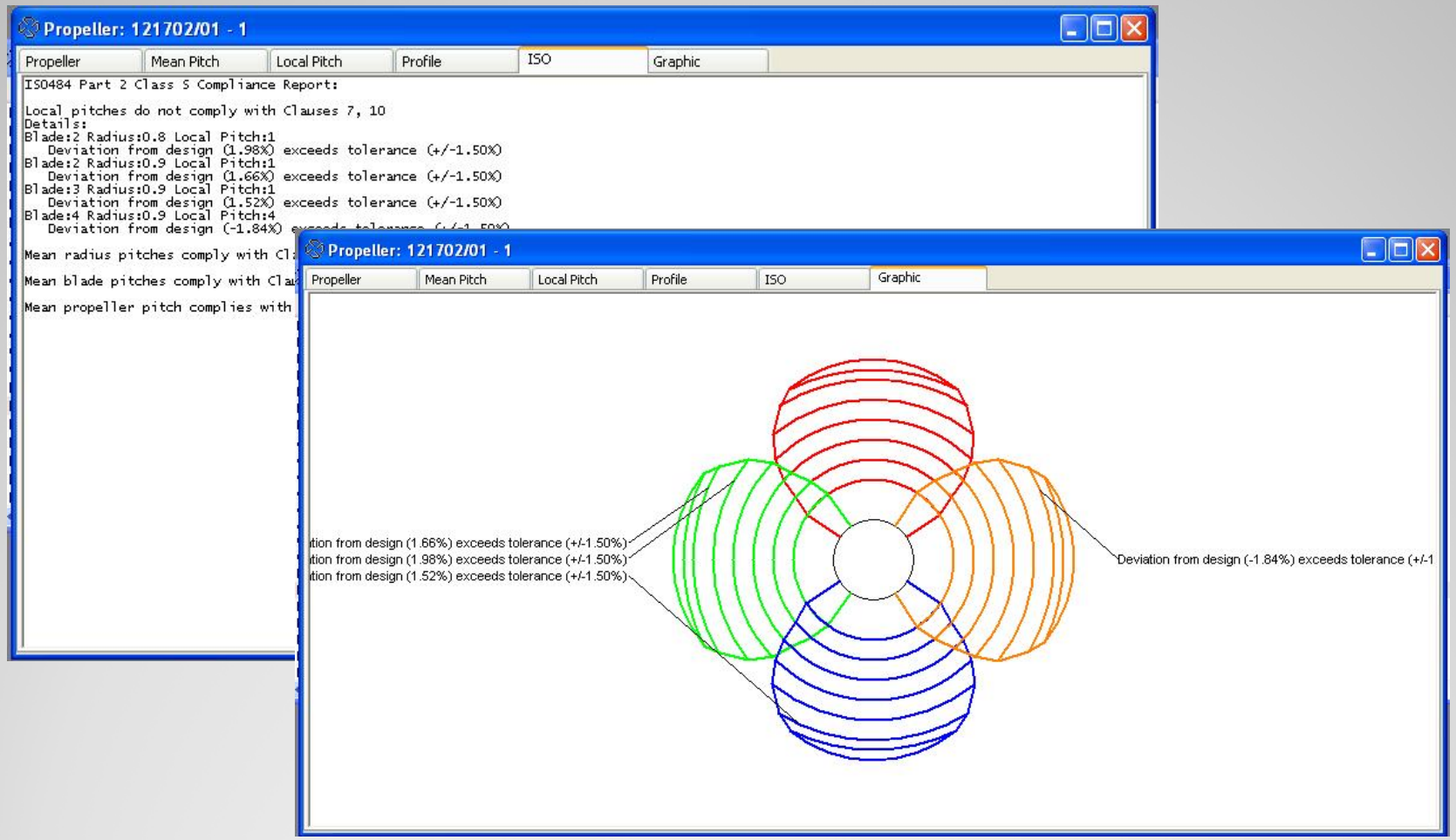


VEEMScan – Display Scan

- Profile display with design reference and guides

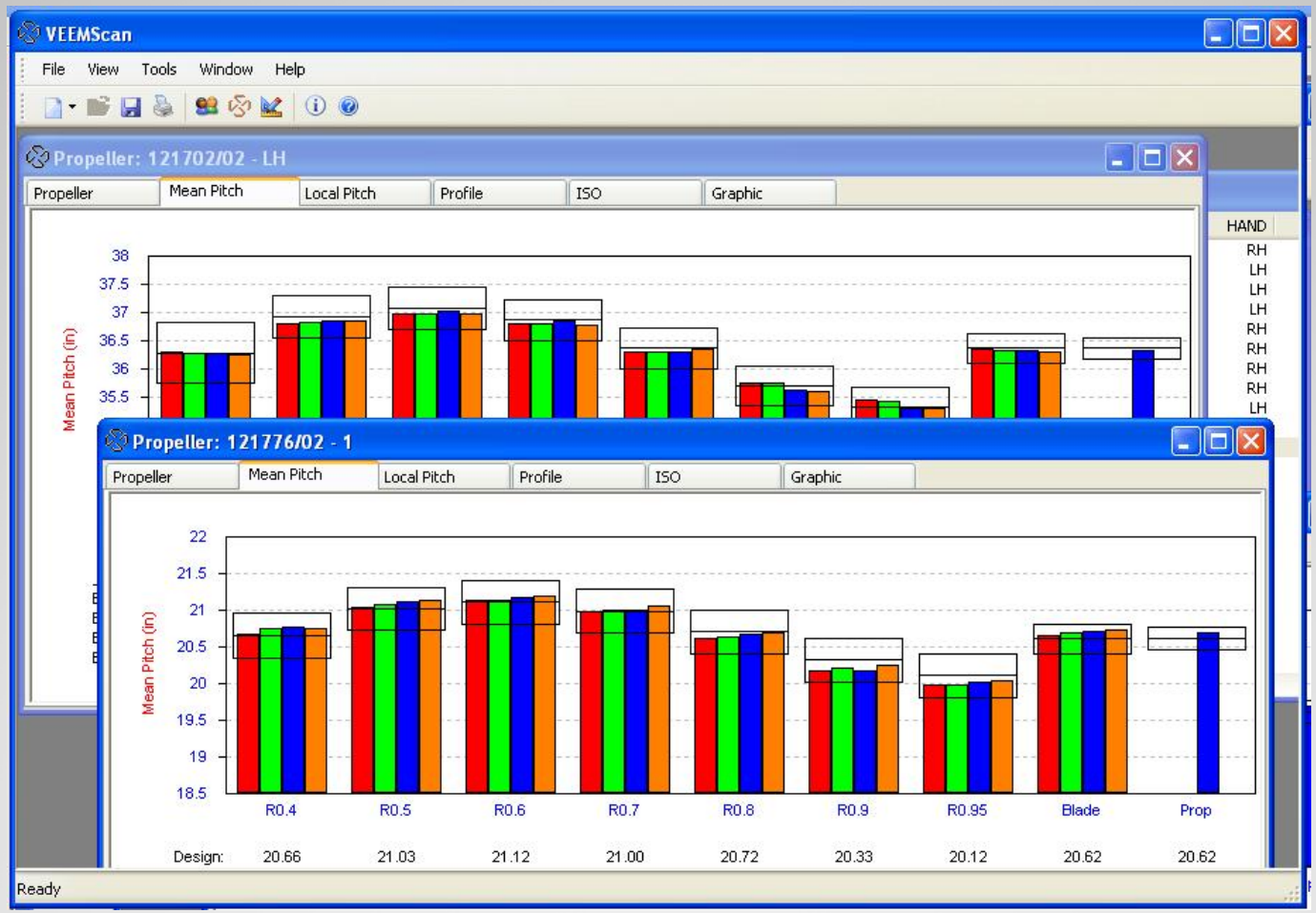
VEEMScan – Display Scan

- ISO evaluation / Graphic representation



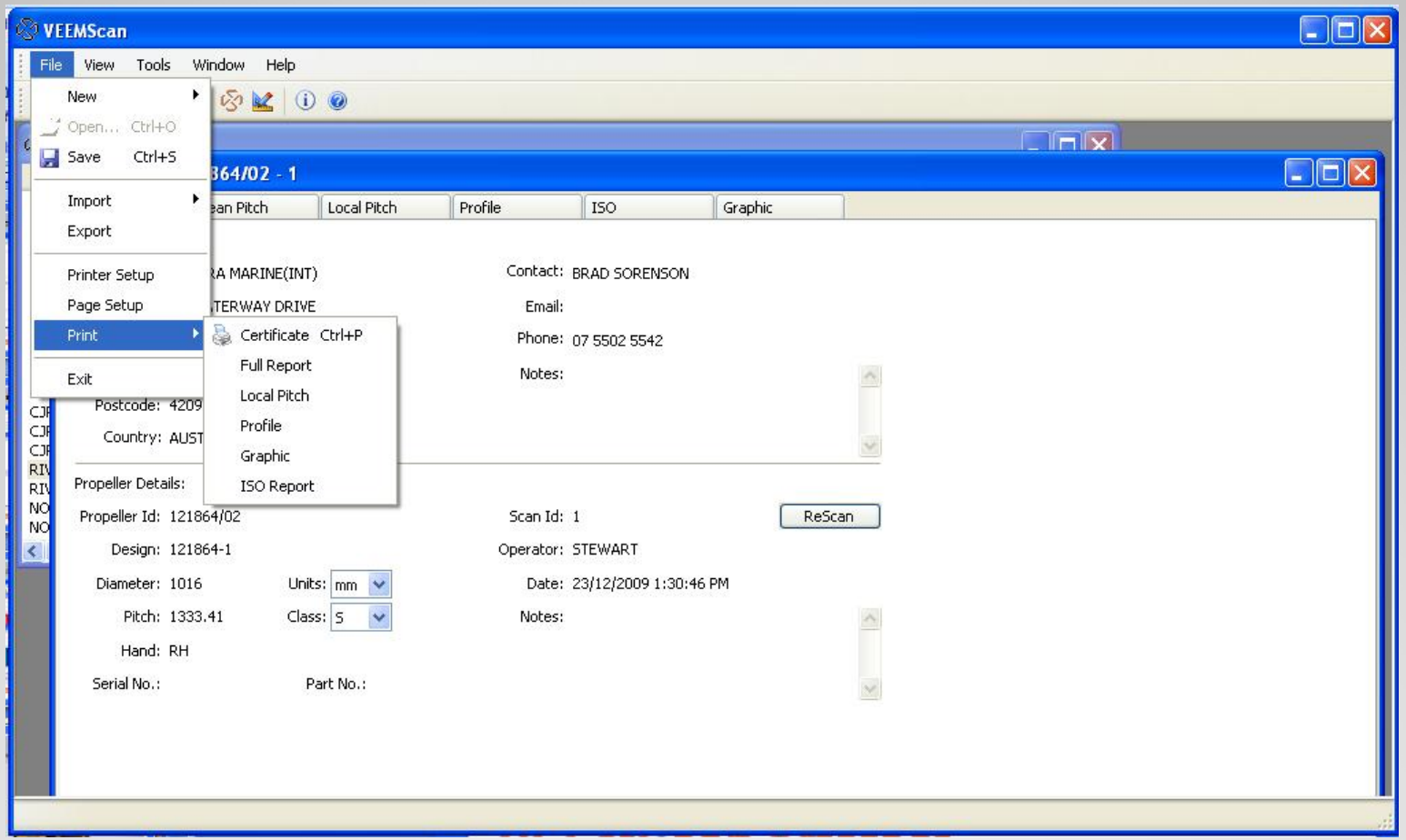
VEEMScan – Display Scan

- Open multiple scans at once for comparisons



VEEMScan – Display Scan

- Print certificate, full or selected reports



VEEMScan – Print Reports