

ARMS PROCUREMENT COMMISSION OF SOUTH AFRICA

ARMSCOR WITNESS STATEMENT

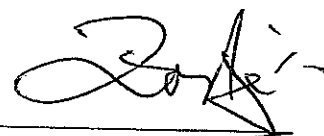
SUPPLEMENTARY STATEMENT OF FRITS NORTJÉ

1. On 30 September 2013, I signed a statement in preparation for my evidence before the Arms Procurement Commission. My statement was accompanied by several annexures and an additional bundle named Frits Nortjé declassified and other documents bundle.
2. Events which unfolded subsequent to the date on which I was to take the stand indicated that further embellishment would be advantageous in order to better inform the Commission regarding certain events. Therefore I have added more documents to my evidence and have dealt with them in slides.
3. Accordingly, my evidence now consists of the following files which have been referred to as bundles for ease of reference:
 - 3.1 bundle 1 - Frits Nortjé statement;
 - 3.2 bundle 2 - Frits Nortjé declassified and other documents;
 - 3.3 bundle 3 - Frits Nortjé declassified and other documents volume two;
 - 3.4 bundle 4 - documents requested by Richard Young, volume one- PCB minutes and other documents;
 - 3.5 bundle 5 - documents requested by Richard Young, volume two - extracts from Naval Board minutes;

3.6 bundle 6 - interview of Frits Nortjé in terms of section 28 of the National Prosecuting Authority Act; and

3.7 bundle 7 - Frits Nortjé slides.

Signed at Sandton on this the 16th day of March 2014



FRITS NORTJÉ

INFORMATION MANAGEMENT SYSTEM

IMS or Data Bus

Issue 3

What is a Data Bus?

- ❖ Many names – data bus, data highway, data transfer system, data distribution system, local area network (LAN).
- ❖ Collection, transportation and distribution of *bulk* data (usually digital) between many users or equipments, making use of *central communication infrastructure*
- ❖ Key – bulk data, central (shared) infrastructure

Advantages of Data Bus

- ❖ Usually contrasted to hard wired point-to-point connection
- ❖ Point-to-point:
 - i. Many equipments individually and permanently interconnected via unique dedicated pairs of wire (usually copper)
 - ii. Quickly becomes physically complex, especially with many users each with multiple interconnections
 - iii. Inflexible and extremely difficult and expensive to accommodate additions or topographical changes

Advantages (continued)

- ❖ Data bus:
 - i. Uses central infrastructure (cabling) to transport data in bulk
 - ii. Physically non-complex interconnection --- each equipment needs only one connection to nearest switch or concentrator
 - iii. Easy and inexpensive to accommodate additions and topographical changes --- only requires new physical connection to nearest switch or concentrator, via standardised interface

Types of Data Buses

- ❖ Different types, reflecting different engineering solutions e.g.:
 - i. Token ring bus --- "carrier" driving around a fixed circuit, collecting and off-loading at designated addresses as it "passes"; may use "concentrators" as local collection or distribution points (like a mail bus)
 - ii. Switched bus --- data switches as local collection or distribution points, transporting data packets directly via "highway" and other switches to users connected to switch; (similar to telephone network)

The Nature of Main Contractorship

- ❖ Main contractor "owns" the risk – carries full liability for all sub-systems and equipment
- ❖ Whoever "owns" the risk has right of selection of sub-contractors and right of risk provision
- ❖ Client cannot prescribe without assuming a certain responsibility -- share risk, or pay someone to "own" risk)
- ❖ ADS long ago encouraged to suggest alternative sub-contractors to reduce risk of main contractorship and reduce price (Letter to ADS dated ca Oct 1995, Bundle 3, p224,)

Sitron Departure Point

- ❖ RFO departure point – full main contractorship with no risk to customer, but with *“maximum use of local industry where this does not pose an unacceptable risk”* (Draft Programme Management Plan § 4.2.8.1, Bundle 1, p187)
- ❖ After selection process of GFC as “preferred bidder”, negotiation with GFC to act as vessel main contractor
- ❖ First duty of GFC – select combat suite (“main”) contractor
- ❖ First duty of combat suite contractor – finalise combat suite composition to meet specification, select combat suite sub-contractors, obtain prices from said selected sub-contractors
- ❖ *This is what main contractors are supposed to do, and that is what ADS/Thomson did — ADS did not act as “tender board”!*

Sitron Combat Suite Position

- ❖ GFC usually partners with Hollandsche Signaal Apparaten (Signaal) as combat suite contractor
- ❖ GFC now chose to partner with nominated ADS as partly (later fully)owned by Thomson (later Thales)
- ❖ Thomson-CSF Naval Combat Systems was experienced and reputable international supplier and integrator of naval combat suites
- ❖ Willingness to engage with nominated local candidate sub-contractors for inclusion in combat suite (CS)

CS Starting Price

- ❖ First quotation for combat suite with local sub-contractors (CS) roughly double the expectation
- ❖ Underestimation by buyer & local industry -- lack of suitable experience
- ❖ Layers of risk provision:
 - Preferred bidder for CS contractor
 - CS contractor for sub-contractors
 - Local sub-contractors for themselves because of liability in unfamiliar contracting model

CS Negotiation and Cost Reduction

- ❖ Navy cut back on "nice-to-haves", non-core requirements and ammunition quantities (Main Statement §6.6, Bundle 1, pp12-13)
- ❖ In time, preferred bidder formed consortium with CS contractor to act as vessel contractor, mostly eliminating one layer of risk provision (Main Statement § 6.3 & 6.4, Bundle 1, pp11-12)
- ❖ Navy assumed limited level of risk sharing for some individual CS elements, where risk consequences were considered manageable (Main Statement § 6.5, Bundle 1, p12)

Part C Concept

- ❖ Capabilities of local companies unknown to CS contractor
- ❖ Standard equipment risk loading of approximately 25% on all non-Thomson sub-systems
- ❖ To reduce cost, Navy eventually agreed to assume *equipment* risk on certain sub-systems where risk was deemed manageable – *integration* risk remained with main contractor
- ❖ Became known as Part C sub-systems, simply to ease contract administration

Part B Concept

- ❖ Navy reluctant and unwilling to assume equipment risk for combat management system (CMS) and associated data bus (IMS), *regardless of supplier*
- ❖ CMS and IMS considered “brain and spinal cord” of combat suite – consequences of delay or malfunction extremely unpalatable
- ❖ Other subsystems (e.g. gun, missile, EW, tracker) can be late or underperform without catastrophically jeopardising entire project – *not so for CMS and IMS*
- ❖ Thus, equipment risk for CMS and IMS remained with main contractor – with other, became known as Part B

IMS as Part B

- ❖ C²I² agreed "Navy should be prepared to pay a modest premium for the peace of mind of the IMS being included in Category B.....where ADS carries the risk..."
- ❖ C²I² judged risk premium should be R15 million --- would probably be insufficient to pay for effect of delay on entire project, and for redevelopment of interfaces by all combat suite sub-contractors
- ❖ C²I² suggested (as alternative) nine month development contract of R15 million to adapt IMS, if unsuccessful forfeits any rights --- still ignored real risk issue, if unsuccessful, who pays for effect of delay period and for redevelopment of interfaces by all sub-contractors?
- ❖ (Letter Young to Moynot 29 July 1999. Bundle 3, pp213-216)

IMS Choices

- ❖ IMS data bus from C²I² not "deselected" by client – never selected in first instance, only "nominated" as candidate
- ❖ IMS data bus from C²I² not "replaced by ADS" with Detexis' Diacerto bus
- ❖ C²I² bus was indeed on offer by ADS, both as Part B and Part C sub-system
- ❖ ADS also offered Detexis as alternative Part B, as explicitly allowed

IMS Selection

- ❖ Client had three options:
 - **High price, no risk to client** (C²I² Part B, risk with main contractor) (±R77m+R12m = R89m, Bundle 3, p113)
 - **Low price, full risk with client** (C²I Part C, risk with client) (±R43m, Bundle 3 p110 & p167)
 - **Low price, no risk to client** (Detexis Part B, risk with main contractor) (±R49m, Bundle 3 p195)
- ❖ Project Control Board decided for cost effective option -- **low price, no risk** , purportedly with cabinet agreement
- ❖ Armscor (new) CEO informed in brief summary report February 2000 (Bundle 4, pp 353-378)

Detexis Investigation

- ❖ Main contractor carried full equipment risk --- no need for client to investigate and control technical aspects as deeply as for Part C
- ❖ Client nevertheless performed quick preliminary investigations --- "Will do the job", despite some reservations (Bundle x, pp 349-352)
- ❖ Follow-up investigations, and customisation proposals by supplier allayed reservations (Bundle 3, pp 1-6)
- ❖ Main contractor remained fully responsible for performance of data bus at equipment and system level – *monitor but don't prescribe and control detail design*

Technical Comparison

- ❖ Two different engineering solutions for same problem of data distribution – both with pro's and cons
- ❖ Direct attribute-by-attribute comparison of specification futile and meaningless
- ❖ Like comparing petrol engine to turbo diesel engine – differ fundamentally but both Otto cycle internal combustion engines:
*Is a diesel engine inferior because it does **not** have an electrical ignition system? Is a petrol inferior because it **needs** an electrical ignition system?*
- ❖ **Decision not based on technical preference** – rather on ownership of risk and associated price

Detexis Credentials

- ❖ 25 years activity with on board real time networks for military – aircraft, battle tanks, ships
- ❖ Produced all data buses (“data highways”) for French Navy, submarines and frigates
- ❖ Produced deterministic and redundant Ethernet data bus for French aircraft carrier Charles de Gaulle
- ❖ Proposed Diacerto bus as a derivative of Charles de Gaulle system
- ❖ (Bundle 3, pp 201-202)
- ❖ Detexis bus did require adaptation and customisation --- quite normal phenomenon; *at their cost and at their risk*

Maxim

If its good enough for the French
Navy,
Then surely its good enough for the
SA Navy

Applicable Technology

- ❖ C²I² design based on token ring FDDI, Detexis design based on switched Ethernet
- ❖ Ethernet technology mature, but not obsolete, evolved to Fast Ethernet and Gigabit Ethernet
- ❖ Diacerto bus from Detexis in final instance a combination of Fast Ethernet and Gigabit Ethernet (Bundle3 , p212)

Technology Used By Other Navies

- ❖ Jane's Defence Weekly 21 March 2001 --- Fast Ethernet data transfer system (data bus) for new Type 45 destroyers of UK Royal Navy (Bundle 3, p218)
- ❖ Jane's International Defence Review September 2008 --- Upgrade to fibre-optic based Gigabit Ethernet for US Navy first Nimitz-class aircraft carrier (Bundle 3, p219)
- ❖ Jane's International Defence Review February 2009 --- Upgrade to fibre-optic Ethernet for Type 23 frigates of UK Royal Navy (Bundle3, p220)

Conclusion

Fibre optic Ethernet data bus from Diacerto of appropriate technology at low price and no risk to customer

The COMPETITION: NDS & SMS

Navigation Distribution System and System Management System

Issue 3

Functions

- ❖ NDS --- collects various navigation inputs and loads it onto data bus in standardised format
- ❖ SMS --- collects, display and stores health information, status and parameter information from other combat suite sub-systems; also used to assist with alignment process of certain combat suite elements, and act as MMI for Gun segment
- ❖ Both integration aids at lower system level, lesser strategic importance

Other Factors

- ❖ Both nominally allocated to ADS in Navy's "nomination" document
- ❖ Intention to make maximal use of standard COTS based Versatile Modular Console (VMC) — uniformity as well as cost and logistic advantages, avoiding cost of multiple environmental qualifications
- ❖ Sub-contractors expected to provide and quote for extended warranty — individual equipment deliveries not synchronised with ships' deliveries

Mark-ups applied by ADS

- ❖ ADS as combat suite contractor added contribution of 7.0% as integration fee to all Part C equipment — essentially integration risk provision as distinct from equipment risk
- ❖ ADS added contribution of 3.2% as handling fee to all Part C equipment — contract administration, financial administration, other administrative expenses

Competition

- ❖ Desperately looking for cost reduction possibilities
- ❖ Decided to investigate direct competition at lower system levels of lesser strategic importance
- ❖ Requested competitive/comparative quotations from ADS and C²I²
- ❖ Quotations via GFC as distinct from ADS/Thomson
- ❖ Value system was *final* price to customer

Evaluation (1)

- ❖ All offers complied technically
- ❖ ADS submitted addendum (apparently) after closing date --- reduction of approximately 9%, apparently *bona fide* errors in logistic component (Bundle 2, p173)
- ❖ C²I² omitted cost of extended warranty --- explicitly for SMS, silent in case of NDS but assumed to be excluded too (Bundle 2, p201)
- ❖ Decided not to disqualify C²I² for minor omission, corrected by applying arbitrary 1.85% to C²I² quotes

Evaluation (2)

- ❖ Also added Integration Fee and Handling Fee to C²I² quotations
- ❖ C²I² considerably cheaper than ADS for NDS --- NDS then re-"allocated" to C²I²
- ❖ For SMS C²I² was marginally higher than amended quotation from ADS, but lower than unamended quotation from ADS
- ❖ Subsequent report to this effect (Bundle 3, p291)

Other SMS Price Factors (1)

- ❖ C²I² included four standard Versatile Modular Consoles as required, but explicitly excluded spares (C²I² Quotation, Bundle 2, p201)
- ❖ Extent and cost of spares unknown but expected to be in the order of R2 million
- ❖ C²I² offered own console at cheaper price --- Firstly unattractive to Navy who aimed at standardisation for logistic, training and multi-functional purposes; Secondly expected additional cost for environmental qualification, C²I² silent on this (*ibid*, Bundle 2, p183)

Other SMS Price Factors (2)

- ❖ C²I² required four industrial computers free of charge as Customer Furnished Equipment (CFE) --- together with spares, adding further unknown cost
- ❖ C²I² required all existing intellectual property (source code) for SMS free of charge
- ❖ (C²I² Quotation, Bundle 2, p193)
- ❖ IP jointly owned by Armscor and ADS, undefined proportions
- ❖ ADS not expected to part cheaply with IP, *if at all!*

SMS Verdict

- ❖ Impossible to quantify and evaluate C²I² quotation with any degree of certainty, except to conclude that final cost to customer considerably higher than "face value" and also higher than ADS price
- ❖ C²I² quotation actually not executable, due to IP demand
- ❖ Upheld "nominal nomination" of ADS as SMS supplier

Further Quotation by C²I²

- ❖ Five weeks later, C²I² submitted unsolicited quotation for NDS and SMS as *combined* packages (Bundle 2, pp 217-236)
- ❖ NDS slightly more expensive (±R0,6m), SMS slightly cheaper (±R2,4m)
- ❖ Extended warranties included for both (*ibid*, p235), but other uncertainties aggravated rather than clarified
- ❖ Silent on spares, CFE computers, IP for SMS
- ❖ Demand for free IP now also for NDS (*ibid*, p234)

End Result

- ❖ Second, unsolicited “package” quotation by C²I² still impossible to quantify and evaluate with certainty, still not executable due to IP demand
- ❖ Ignored second quotation, remained with allocations resulting from previous evaluation

SITRON: THE HISTORY

Diodon & Suvecs to Sitron

Issue 2

Preamble

It should be noted that where some of the facts in this section do not fall within my personal knowledge or are general knowledge, I extracted such information from reliable documentation as variously quoted herein and provided to the Commission in the form of bundles.

Sitron: Technology History

- ❖ Local industry built up considerable niche areas of capabilities over many years
- ❖ Result of numerous projects for Army, Air Force and Navy, as well as pure technology development
- ❖ Much of it applicable to warships, and of strategic nature (as elaborated later), e.g.:
 - Radars
 - Electronic warfare
 - Command, control and display
 - Communications
 - Air defence missiles
 - Etc.

Diodon Inception

- ❖ 1991 – Cancellation of Project Falcon (new surface combat vessels) and Project Liberty (point defence system for surface combat vessels)
- ❖ 1992 – Launch of technology retention activities (Project Diodon), following abovementioned cancellation
- ❖ Aim of Diodon - Retaining industry's specialist knowledge base by building generic technology demonstrators relevant to new generation naval combat system

Diodon Execution

- ❖ Elements of Diodon built on numerous previous SANDF projects, both capital and technology development
- ❖ Contractors for Diodon selected and motivated based on previous track record and specialist knowledge in strategic areas (single source)
- ❖ Defence market small and highly specialised – little opportunity for local competition, even within European countries, let alone South Africa

Sitron- Phase 1

- ❖ 1993 – Corvette project revived with updated user requirement – Project Sitron
- ❖ Feb 1994 - Project Study Report (PSR) for Sitron approved, confirming local combat suite only affordable option (Bundle 3, p 40), also meeting strategic objectives as per Defence Review (see later)
- ❖ PSR confirmed applicability of all Diodon technologies (*ibid*)
- ❖ Apr 1994 – Long lead development for Sitron combat suite started, based on Diodon, funded by Sitron

Sitron Deferred

- ❖ Jun 1995 – Sitron deferred indefinitely at political level by new government, pending Defence Review
- ❖ Jun 1995 – C Navy instruction to motivate new technology retention project, inter alia:
- ❖ “.....to ensure the survival of key defence industries such as UEC.” (UEC became ADS) (Bundle 3, p34)

Suvecs Motivation

- ❖ Jul 1995 – Principle motivation by Navy to Defence Command Council (DCC), requesting special Technology Retention Funds (TRF) (Bundle 3, p40)
- ❖ Sep 1995 – Detail motivation & project definition to Defence Research & Development Board (DRDB, Afr Verdedigingsnavorsing- en Ontwikkelingsraad or VNOR) (Bunle 3, pp 56-81)

Suvecs Approval

- ❖ Sep 1995 – Approval of Suvecs project definition by Executive Committee of DRDB (Dagbestuur van VNOR) (Bundle 3, pp 49-51)
- ❖ Same entities as Diodon and deferred Sitron
- ❖ Mostly same companies, but some corporate restructuring

Suvecs Implementation

- ❖ Oct 1995 → Various individual contracts on single source companies, as motivated to DRDB and to Armscor authorisation committees.
- ❖ Suvecs remotivated and extended on annual basis until Sitron became effective in Apr 2000
- ❖ Sep 1997 - Companies involved in Suvecs nominated by Navy as sub-contractors for Sitron Phase 2, sub-systems described (Bundle 1, pp 226-238)
- ❖ Companies nominated based on previous investment, specialist knowledge in strategic niche areas, overall affordability

Sitron Nomination: Technology Management

- ❖ DOD policy for management of acquisition process, VB 1000 Issue 2 dated 20 April 1994, paragraph 5.1:

"The aim of technology development is to identify technologies and to develop and maintain them for employment during the acquisition of user systems." (Bundle 1, p30)

- ❖ Clear expectation that technology development and retention is purposefully aimed at future acquisition
- ❖ Clear expectation for acquisition to capitalise on previous technology investment

Sitron Nomination: Establishment of Industry

- ❖ *ibidem* VB 1000 paragraph 16.1 (Bundle 1, p32):
"The policy, furthermore, is to establish the armaments industry, and to expand it to become a fully fledged and self-sufficient industry. This is done by identifying the system suppliers for at least the product system, and then to develop them until they reach full status. Competition will be encouraged only at the lower system levels."
- ❖ Warship actually a super product system comprising many product systems, most of which classified as strategic essential capabilities, but some lower level less strategic products

Sitron Nomination: Strategic Capabilities

- ❖ Defence Review (1997), paragraphs 10.1 and 12 through 17 define and define various "*Strategically Essential Capabilities*", requiring at least certain level local self sufficiency
- ❖ All Suvecs and thus nominated Sitron systems/contractors can be linked to capabilities listed under paragraphs 12, 13 and 14.4

(Bundle 1, pp 37A-37C)

Sitron Nomination: Approach to Industry

- ❖ Armscor Policy: Acquisition, KB 1000 Issue 3 dated 01 May 1995: (Bundle 1, pp 33-34)
*"6.6.1: Armscor's first priority during acquisition is to **satisfy the client's needs**.*
*"6.6.3: During acquisition **preference must** be given to the employment and expansion of the local industry, with due allowance for **good business principles** and **strategic considerations**."*
- ❖ Note imperative: "*must*"
- ❖ Note four proviso's or caveats --- client's needs first (includes affordability), preference (not mandatory), good business principles, strategic considerations

Nomination and Main Contractorship

- ❖ Original intent – Numerous individual sub-contractors, Armscor effectively assuming risk of integration
- ❖ Realisation of enormous complexity of modern warship – Swing to main contractorship
- ❖ Realisation that main contractor has a say in choice of sub-contractors – strategy still *“maximum use of local industry where this does not pose an unacceptable risk”* (Draft Programme Management Plan, paragraph 4.2.8.1, Bundle 1, p187)

Nomination & Alternatives

- ❖ RFO encouraged tenderers to offer alternative solutions to reduce risk and/or price
 - *“OFFERORS may submit an alternative Offer not strictly in accordance with the requirements, or an alternative Offer to satisfy a requirement”*
 - *All offers received will be considered provided the material and work offered are adequately described and the BUYER is satisfied that the technical and performance requirements are met.”*
 - RFO §2.10, Bundle 1, p45

Nomination & Proviso's

- ❖ RFO § 1.1.4 (Bundle 1, 42) :

"It is envisaged that the final definition [composition] and specification [of the combat suite] will be agreed during the Negotiation Phase...."

- ❖ Draft Programme Management Plan § 4.2.3.3.4 (Bundle 1, p185):

*".....the final costs [of the combat suite] will only be apparent after negotiations with the preferred Vessel Contractor. **In particular the integration and business risk costs have to be determined.**"*

Nomination & Entitlement

- ❖ "Nomination" actually a process commencing in 1992
- ❖ Eventual nomination in 1997/8 (as candidates only) not at variance with policies extant at time (VB 1000, KB 1000, Defence Review)
- ❖ RFO and accompanying draft Programme Management Plan explicitly allowed alternative offers

❖ Nomination did not equal Guaranteed Selection!

THE NINETIES

Decade of Globalisation

Issue 2

Military Industry in RSA

- ❖ Early nineties – Political change in RSA
- ❖ Drastic reduction in SA Defence budget allocations and hence in orders to SA military industry
- ❖ Middle nineties - SA military industry desperate for alternative markets overseas
- ❖ Only viable as niche suppliers in partnership with multi-nationals

Military Industry World Wide

- ❖ Early nineties – End of cold war internationally
- ❖ Drastic reduction in international defence spending
- ❖ Middle nineties – Multi-nationals amalgamating, & looking for new markets in newly opened areas
- ❖ SA one such opportunity, with small but capable local industry
- ❖ Mostly only viable in partnerships with local industry

Some Examples in Europe

- ❖ British Airways (BA) & GEC
- ❖ BA & Vosper Thornycraft
- ❖ Thomson & Marconi (Sonar)
- ❖ Thomson & Signaal
- ❖ DASA & Aerospatiale → EADS
- ❖ Saab & Volvo

Examples in RSA

- ❖ Examples of multinationals taking ownership in SA industry (partly or fully), over time
 - i. Saab – Denel Aerostructures
 - ii. Saab – Grintek Avitronics (later entire Grintek)
 - iii. DASA – Reutech Radars
 - iv. Vickers – Reumech
 - v. Zeiss – Denel-Eloptro
 - vi. Rheinmetall – Swartklip & Somchem
 - vii. Thomson (later Thales) --- ADS

Thomson & ADS

- ❖ ADS experienced with “passive” side of Combat Management System (CMS), i.e. collation and display of information from various sensors in format suiting SA Navy
- ❖ ADS inexperienced with modern and complex “active” side, i.e. Threat Evaluation and Weapons Allocation (TEWA)
- ❖ Advantageous to ADS to have experienced partner/parent to obtain knowledge transfer from, thus expanding local capability in crucial area of integration

Thomson/ADS CMS

- ❖ Eventual CMS a merging of ADS "Diamant" and Thomson "Tavitec"
- ❖ ADS only one of several SA companies with foreign shareholding
- ❖ Nothing unusual in relationship between Thomson and ADS --- client would have welcomed relationship with any of several reputed combat suite contractors

Examples of Benefits to SA Companies

Beneficial to local companies over time:

- i. Export EW Equipment by Saab-Grintek (recently German Air Force)
- ii. Export munitions by Rheinmetall-Denel (mainly Middle East)
- iii. Export of optronic equipment by then Eloptro (Switzerland & Germany)
- iv. Export consoles and integration by ADS (now Thales SA) (Asia)