

***Case No COMP/M.5032 -  
ROXEL / PROTAC***

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**REGULATION (EC) No 139/2004  
MERGER PROCEDURE**

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Article 6(1)(b) NON-OPPOSITION  
Date: 21/04/2008

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COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 21/04/2008

SG-Greffe(2008) D/201871/201872

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PUBLIC VERSION

MERGER PROCEDURE  
ARTICLE 6(1)(b) DECISION

**To the notifying parties**

Dear Sir/Madam,

**Subject: Case No COMP/M.5032 - Roxel/ Protac  
Notification of 12 March 2008 pursuant to Article 4 of Council Regulation  
No 139/2004<sup>1</sup>**

1. On 12 March 2008, the Commission received notification of a proposed concentration pursuant to Article 4 of Council Regulation (EC) No 139/2004 ('the Merger Regulation') by which the undertakings MBDA SAS ('MBDA', France) and SNPE Matériaux Energétiques S.A. ('SME', France), acquire within the meaning of Article 3(1)(b) of the Merger Regulation, joint control of Protac SA ('Protac', France) through Roxel SAS ('Roxel', France) by way of purchase of shares.
2. After examination of the notification, the Commission has concluded that the operation falls within the scope of the Merger Regulation and does not raise serious doubts as to its compatibility with the common market and the EEA agreement.

**I. THE PARTIES**

3. MBDA is primarily active in the manufacture and sale of guided weapons and guided weapons systems. It is jointly controlled by BAE Systems plc (37.5%), EADS N.V. (37.5%) and Finmeccanica SpA (25%).
4. SME is a wholly-owned subsidiary of SNPE S.A. ('SNPE'), the state-owned parent company of the SNPE group. SME manufactures propellant charges and energetic equipment, primarily for the aerospace, defence and automotive industries. It also produces propellants and explosives for military applications.

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<sup>1</sup> OJ L 24, 29.1.2004, p. 1.

5. The SNPE group is also active in the production of specialty chemicals including nitrocellulose which is used *inter alia* as an input in the manufacture of certain propellant charges for tactical missiles. It also produces ammonium perchlorate which is a chemical used as a component in the manufacture of advanced composite propellants. These can then be used in both solid rocket motors for tactical and strategic military products and solid boosters for space launchers.
6. Protac is primarily active in the design and production of propulsion systems, or more specifically, solid rocket motors ('SRM') for tactical guided weapons. It also has limited sales relating to the supply of gas generators/gas generator sub-systems and structural components used for civil applications. Protac is currently a wholly-owned subsidiary of Bayern-Chemie Gesellschaft für flugchemische Antriebe mbH ('Bayern-Chemie'). Bayern-Chemie is itself an indirectly owned subsidiary of MBDA.<sup>2</sup>

## **II. THE OPERATION AND THE CONCENTRATION**

7. The proposed transaction consists of the acquisition of joint control over Protac by MBDA and SME through their 50/50 joint venture, Roxel. [...] <sup>3</sup>
8. MBDA acquired Bayern-Chemie and Protac on 31 August 2007. MBDA subsequently offered Protac for sale to Roxel on 7 September 2007 pursuant to the terms of the Roxel shareholders' agreement. Bayern-Chemie and Roxel signed a Share Purchase and Transfer Agreement on 13 February 2008 as a result of which Protac will be jointly controlled by MBDA and SME through Roxel.
9. The proposed transaction therefore constitutes a concentration within the meaning of Article 3(1)(b) of the Merger Regulation. The undertakings concerned in this case are MBDA and SME.

## **IV. COMMUNITY DIMENSION**

10. The combined aggregate worldwide turnover of all the undertakings concerned in 2006 exceeded €5,000 million. The aggregate Community-wide turnover of more than two of the undertakings concerned amounted to more than € 250 million. The undertakings concerned did not achieve more than two-thirds of their aggregate Community-wide turnover within one and the same Member State. The concentration therefore has a Community dimension pursuant to the Article 1(2) of the Merger Regulation

## **V. COMPETITIVE ASSESSMENT**

11. The proposed transaction results in a change in the quality of control over Protac from sole to joint control. This is because Protac, which is currently under the sole control of MBDA through Bayern-Chemie, will come under the joint control of MBDA and SME via Roxel.
12. MBDA's acquisition of Bayern-Chemie/Protac was approved by the Commission on 31 July 2007. In its decision of that date, the Commission examined the horizontal overlap arising from the transaction given MBDA's existing activities in solid rocket

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<sup>2</sup> See Case No. COMP/M.4653 *MBDA/Bayern-Chemie*, decision of 31 July 2007

<sup>3</sup> [...]

motors via its interest in Roxel. The Commission also examined the potential vertical effects of the transaction arising from Bayern-Chemie/Protac's activities in the production and sale of propulsion systems, in particular solid rocket motors, for tactical guided weapons for which MBDA is one of the world's leading suppliers.

13. In view of the relatively short time that has elapsed since the Commission approved the proposed acquisition of Bayern-Chemie by MBDA and the absence of any indication that the structure of the markets has changed in the interim, the Commission's market investigation in the present case has focused on the new vertical links brought about by the proposed transaction in the form of the SNPE group's production of chemicals such as nitrocellulose and ammonium perchlorate. These chemicals are used in the production of propellant charges which are themselves a component of solid rocket motors.

#### **A. Relevant product markets**

##### *Propulsion systems*

14. A propulsion system is a machine that produces thrust to push an object forward. In previous decisions<sup>4</sup>, the Commission has drawn a distinction between propulsion systems for tactical missiles on the one hand and propulsion systems for strategic ballistic missiles on the other hand<sup>5</sup> due to a lack of demand-side and supply-side substitutability.
15. Different technologies can be used in propulsion systems for tactical missiles: solid rocket motors, liquid and solid ramjets and turbo-propulsion. New technologies such as hybrid rocket engines, gel propellant technology and pulse detonation engines remain in the early stages of development.
16. Solid rocket motors (SRM) provide thrust by accelerating the exhaust produced by the combustion of a propellant through a nozzle. It is the most common type of propulsion system. SRM consist of the following components: (i) a propellant charge<sup>6</sup>; (ii) an igniter; (iii) a motor case; (iv) a blast pipe; (v) a nozzle; and (vi) insulation.
17. Ramjet technology differs from SRM in the sense that air is drawn in to assist in the creation of thrust. In terms of performance, ramjets are selected by customers requiring a much higher distance coverage that can be achieved with a SRM at a price which could be up five to ten times that of a SRM. Ramjets can either use solid or liquid fuel. Turbo propulsion is based on the use of a jet engine.

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<sup>4</sup> Case n° COMP/M.4653 *MBDA/Bayern-Chemie*, decision of 31.7.2007 and Case n° COMP/M.2938 *SNPE/MBDA/JV*, decision of 30.10.2002

<sup>5</sup> Tactical missiles are used for specific, geographically limited actions, either to protect territorial property against the threat of attack (e.g. from tanks, planes or ships) or to dispose of enemy capacity in destroying or damaging its infrastructure. Tactical weapons typically carry a conventional high explosive warhead. Strategic missiles, on the other hand, are dedicated to State defence and typically have a longer range and greater destruction capabilities than tactical missiles. The decision to employ strategic missiles is generally reserved to the highest levels whereas the decision to use tactical missiles is normally made by commanders in the field.

<sup>6</sup> According to the notifying parties, when the propellant charge of a rocket motor is ignited, thrust is created by the combustion process. The propellant charge is made up of an energetic material processed in a specific shape which provides energy by controlled combustion.

18. In previous cases, the Commission has held that there is a separate market for the supply of SRM but left open the question as to whether the relevant market should also include ramjets and the other new technologies mentioned above. The notifying parties submit in view of supply-side and demand-side differences between SRM, ramjets and turbo propellants that each constitutes a distinct product market. The parties further consider that a distinction should be drawn between solid and liquid ramjets again because of supply and demand-side considerations.
19. Protac is only active in SRM and there is as such no overlap with Roxel's activities in other propulsion technologies<sup>7</sup>. In addition, none of the parties to the transaction is active in turbo propulsion technology. However, given the absence of competition concerns under any alternative product market definition, the question whether the relevant product market should include technologies other than SRM can again be left open.

#### Propellant charges

20. As noted above, SRM consist of six main components including the propellant charge. The Commission has previously held that it is not necessary to define separate markets for each of these components as they are not sold on a stand-alone basis. The Commission has nevertheless noted that the production of propellant charges could due to demand-side considerations be considered as a market upstream of SRM.<sup>8</sup>
21. Roxel, but not Protac, is active in the manufacture of propellant charges and makes limited sales of propellant charges to other SRM producers. The notifying party submits that such sales do not constitute a separate product market but rather fall within the overall market for SRM. In support of this argument, they cite the limited instances of the sales of propellant charges as stand-alone products and the fact that suppliers of propellant charges are, in the main, the same as the suppliers of SRM.
22. Responses to the Commission's market investigation have generally supported the notifying parties' view that it is not necessary to define a separate product market for the sale of propellant charges to third parties for incorporation into SRM although it has also been suggested that such a distinction should be made as some SRM manufacturers do not produce propellant charges and conversely some propellant charge manufacturers do not produce SRM.
23. In the present case, however, it is not necessary to define whether there is a distinct relevant product market for the supply of propellant charges for incorporation into SRM, as the proposed transaction would not give rise to any competition concern even on this narrow basis.

#### Inputs for the production of propellant charges

24. The SNPE group manufactures a number of substances that are used in the production of propellants for SRM. The main substances, which are discussed below, are

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<sup>7</sup> Roxel is active in the production of liquid ramjets in Europe [...] for strategic rather than tactical propulsion. Roxel is not active in the solid ramjet sector.

<sup>8</sup> See Case COMP/M.2938 – SNPE/MBDA/JV, (para 11) and Case COMP/M.3205 SNPE/SAAB/PATRIA/JV (EURENCO), decision of 2 October 2003.

nitrocellulose (which is also known as 'cotton powder') and ammonium perchlorate. SNPE manufactures other substances that may also be used in the production of SRM (nitrofilm, rubber thermal protection, inhibiting coatings, inert materials or pyrotechnic devices). However, these products are either not sold to SRM manufacturers other than Roxel or where possibly marketed to other SRM manufacturers, they are supplied to Roxel in minimal quantities (i.e. less than 1% of the sales of such products to the open market). In the light of this, the Commission concludes that there are no competition issues relating to these other products and therefore they will not be considered further.

(i) Nitrocellulose for military use

25. Nitrocellulose is the raw material for the manufacturing of explosive powders used for shooting (for civil and military use) and solid propulsion systems using double-base propellants. Nitrocellulose is obtained through the nitration of cellulose, using a mix of nitric acid and sulphuric acid. The cellulose originates from cotton or wood pulp, which undergo several chemical purification treatments before they can be used as raw materials. According to the notifying party, nitrocellulose derived from wood ensures relatively lesser propulsive performances than cotton-based nitrocellulose. Consequently, the majority of propellant charges for SRM are made of cotton-based nitrocellulose although some SRM programmes include a proportion of wood-based nitrocellulose. From a supply-side perspective, the notifying parties submit that all nitrocellulose producers offer the whole range of nitrocellulose, whether wood-based or cotton-based<sup>9</sup>.
26. The manufacture of nitrocellulose requires highly-developed technical knowledge and experience, in order to be able to manufacture a powder responding to specific performances. This technical know-how is even more important where military applications are concerned and producers are required to undergo a very demanding qualification process.
27. In view of the specific competitive conditions in the market for nitrocellulose for military use, the parties submit that nitrocellulose for military use ('energetic nitrocellulose') may belong to a separate product market from nitrocellulose for civil applications ('industrial nitrocellulose') such as printing inks, paints, varnishes and coatings.
28. Responses to the market investigation lend support to the view that nitrocellulose for military use should be distinguished from nitrocellulose for civil applications. In particular, respondents highlighted the existence of specific NATO and US qualification standards, Stanag 4178 and MIL-DTL-244 respectively, applying to nitrocellulose for military applications.<sup>10</sup>

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<sup>9</sup> Response from the notifying parties to the Commission's request for information sent on 8 April 2008

<sup>10</sup> Stanag 4178 ("Test procedures for assessing the quality of deliveries of nitro-cellulose from one NATO nation to another") and MIL-DTL-244 include performance specifications and testing standards for nitrocellulose to be used for programmes launched by NATO countries and the US. As such, in the notifying parties' view, they imply a specific quality for any nitrocellulose to qualify as "military grade" in the countries concerned.

29. However, as the proposed transaction would not give rise to any competition concern whatever the product market definition, it is not necessary in the present case to conclude on this point.

(ii) Ammonium perchlorate for military use

30. Ammonium perchlorate is a chemical product used as a component for the manufacture of advanced composite propellants. Ammonium perchlorate is obtained through electrolysis and crystallization. Ammonium perchlorate is then mixed with other components for use in solid propellants. Ammonium perchlorate can then be used both in (i) SRM for tactical and strategic military products, and (ii) solid boosters for space launchers<sup>11</sup>.

31. The notifying parties submit that although space and military grade ammonium perchlorate is of a very similar quality, there is no open market for ammonium perchlorate for space launchers as the ammonium perchlorate used for the space programmes of each space agency is never put out to tender and is supplied by the same supplier(s).<sup>12</sup> Consequently, it considers that the relevant product market in the present case is that of ammonium perchlorate for military applications.

32. Responses to the market investigation in the present case do not generally support the view that it is appropriate to draw a distinction between the supply of ammonium perchlorate for space launchers and that for SRM. However, as no competition concerns would arise whether the relevant product market is considered to be as broad as encompassing all ammonium perchlorate or as narrow to comprise only ammonium perchlorate for SRM for tactical weapons, the precise product market definition can be left open in the present case.

**B. Relevant geographic markets**

Solid rocket motors

33. In the *MBDA/Bayern-Chemie* decision, the Commission found that the geographic markets for SRM (and tactical weapons) 'still have a strong national dimension' where a domestic supplier exists. This was in spite of 'some developments and initiatives which might point to an international scope of these markets.'<sup>13</sup>

34. The notifying parties submit that this trend towards internationalisation will increase in the future, not least because of initiatives of bodies including the Commission itself which published a proposal for a new procurement directive in December 2007 adapted

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<sup>11</sup> For the sake of completeness, the notifying parties note that airbag systems for the automotive industry also use ammonium perchlorate. However, this use is marginal compared to the military and space uses and is not considered further.

<sup>12</sup> According to the notifying parties, space agencies (NASA with the Shuttle programme and ESA with the Ariane programme) never put such programmes out to tender. The ammonium perchlorate for these programmes is therefore supplied by AMPAC and SNPE respectively with no competition from other suppliers.

<sup>13</sup> Case n° COMP/M.4653 *MBDA/Bayern-Chemie*, decision of 31.7.2007, paragraphs 21 and 23.

to the specificities of defence markets.<sup>14</sup> In light of these developments, the notifying parties submit that, if not already the case, the market for SRM should comprise at least the EEA and probably the United States.

35. For the purposes of the present case, in the absence of competition concerns, the precise scope of geographic market for SRM can be left open.

Propellant charges

36. As noted above, the notifying parties maintain there is no distinct market for the sale of propellant charges as they are very rarely sold on a stand-alone basis. Consequently, they have not proposed a relevant geographic market.

37. On the basis that the supply of propellant charges on a stand-alone basis is seen by the notifying parties as ancillary to the supply of SRM, it could be assumed that the scope of this potential geographic market is the same as that for SRM. However, as the proposed transaction would not give rise to any competition concern on this hypothetical product market, the geographic market definition can be left open in the present case.

Inputs for the production of propellant charges

(i) Nitrocellulose for military use

38. According to the notifying parties, the open market for nitrocellulose for military use is almost global in scope, consisting of NATO member States which have no domestic producer and non-NATO member States. In this regard, it is suggested that in NATO member States where there is a domestic producer, such as the United States, there appears to be generally (although not necessarily) a strong preference for domestic producers where sales to the relevant Ministries of Defence ('MoDs') are concerned.<sup>15</sup>

39. The responses to the market investigation lend support to the notifying parties' argument. Whereas some producers have indicated they are only active in meeting domestic demand, one supplier has indicated that it is active on a much broader geographic scale and therefore views the market as being global in scope. However, in the present case, the precise scope of the relevant geographic market can be left open as no competition concerns arise whatever the definition.

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<sup>14</sup> See COM(2007) 766 final, Proposal for a directive of the Parliament and of the Council on the coordination of procedures for the award of certain public works contracts, public supply contracts and public service contracts in the fields of defence and security (presented by the Commission).

<sup>15</sup> The notifying parties submit that pursuant to the Buy American Act 1933, the US Department of Defense is bound to source nitrocellulose from ATK, the only US producer of military nitrocellulose.



*(ii) Ammonium perchlorate for military use*

40. In a similar fashion, they suggest the open market for ammonium perchlorate for military use is also almost global in scope although it excludes the United States, which they note is traditionally reserved to the domestic US producer, and "NATO-unfriendly" States.<sup>16</sup>
41. The market investigation has confirmed that sales of ammonium perchlorate occur on a worldwide basis. Export sales are, however, in some cases subject to prior government approval. In the present case, the precise scope of the relevant geographic market can be left open as no competition concerns arise whatever the definition.

**C. Competitive assessment**

*Horizontal issues*

42. The proposed transaction will result in a change in the nature of control over Protac, from sole control by MBDA to joint control by MBDA and SME. However it will not create any new horizontal overlap in the SRM market since Protac is already under sole control of MBDA through Bayern Chemie. The market shares of the parties and their competitors are provided below.

**Solid Rocket Motors 2004-2006**

*Source: parties' estimates*

	<b>Market value €m</b>	<b>Roxel (including Protac)</b>	<b>Avio</b>	<b>Safran SPS</b>	<b>Nammo- Raufoss</b>	<b>Aerojet</b>	<b>ATK</b>	<b>Others</b>
Global	650	[20-30]%	[0-5]%	[0-5]%	[0-5]%	[20-30]%	[20-30]%	[20-30]%
Europe	250	[55-65]%	[0-5]%	[0-5]%	[10-20]%	[0-5]% <sup>17</sup>	[0-5]% <sup>18</sup>	[0-5]%
France	[50-100]	[65-75]%	-	[10-20]%	[5-10]%	[0-5]%	[0-5]%	-
Germany	[0-50]	[20-30]%	-	-	[30-40]%	[10-20]%	[10-20]%	[10-20]%
Italy	[0-50]	[15-25]%	[45-55]%	-	[5-10]%	[0-5]%	[0-5]%	[10-20]%
UK	[50-100]	[75-85]%	-	-	[5-10]%	[0-5]%	[0-5]%	[5-10]%
Other EEA	[0-50]	[10-20]%	-	-	[35-45]%	[10-20]%	[10-20]%	[10-20]%

<sup>16</sup> According to the notifying parties, "NATO-unfriendly" States cannot procure ammonium perchlorate from countries which are members of the Missile Technology Control Regime ("MTCR"). The MTCR is an informal and voluntary association of 34 countries which share the goals of non-proliferation of unmanned delivery systems capable of delivering weapons of mass destruction, and which seek to coordinate national export licensing efforts aimed at preventing their proliferation. Accordingly, the export of ammonium perchlorate for military use is restricted to countries which are MTCR members.

<sup>17</sup> This market share relates to turnover generated through sales of US propulsion systems for use in US GW/GWS.

<sup>18</sup> *Ibidem.*

	Market value €m	Roxel (including Protac)	Avio	Safran SPS	Nammo-Raufoss	Aerojet	ATK	Others
Countries								

43. On a global level, Roxel + Protac has a market share of [20-30]% (Protac: [0-5]%, Roxel: [10-20]%). The main competitors at this level are the American companies Aerojet and ATK each with [20-30]% of the market. At an EEA level, its shares are higher ([55-65]%) due to the weak market presence of non-EEA suppliers. In the EEA, remaining competitors are Nammo-Raufoss ([10-20]%), Safran SPS ([0-5]%) and Avio ([0-5]%).
44. If national markets are considered, Roxel + Protac has a strong position in France ([65-75]%) and the UK ([75-85]%) and to a lesser extent in Germany.
45. As mentioned above, the transaction does not change the existing relationships as SME does not contribute additional horizontal links in markets where Protac is active. The link to Roxel already existed pre-transaction, as Roxel was and still is jointly controlled by SME and MBDA, the ultimate parent company of Protac through Bayern-Chemie.
46. Moreover, in the *MBDA/Bayern-Chemie* case, the Commission found that the transaction would not significantly impede competition in the SRM market, considering the strong buyer power of national Ministries of Defence, which are the sole customers for tactical military devices and the existence of alternative suppliers at all levels of the supply chain. As this transaction would not create any new horizontal overlap, the same conclusion remains valid in the present case.

#### Vertical issues

#### Propellant charges

47. As Protac is not active in the manufacture of propellant charges, the proposed transaction will not result in any horizontal overlap. As regards the risk of customer foreclosure, Protac already purchases its propellant charges from Roxel or its current parent company, Bayern-Chemie (as regards the VT-1 missile programme). . In any event, Protac by itself is a small player in the solid rocket motors market in Europe with a market share of less than 15% under any possible geographic market definition. Therefore, the risk of customer foreclosure can be excluded.
48. As regards input foreclosure, Roxel has currently very limited external sales of propellant charges to be incorporated into solid rocket motor programmes of other manufacturers (less than 5% of total sales of propellant charges in Europe, according to parties' estimates). Given the limited amount of Roxel's sales in propellant charges on a stand-alone basis, the risk of input foreclosure can be excluded.
49. For future programmes, [...]. However, these programmes are not in the production phase yet and no firm orders are expected to date. Therefore it is not expected that the transaction would have an immediate impact on these potential programmes and in any event, there are sufficient alternatives to the merged entity as regards the supply of propellant charges for solid rocket motors.

Nitrocellulose and ammonium perchlorate

50. As regards risks of input foreclosure and according to the notifying party's estimates, SNPE's share of the open market for nitrocellulose for military applications is less than [10-20]% on a global level and less than [0-5]% at an EEA level.<sup>19</sup> For ammonium perchlorate, SNPE's shares would amount to [5-15]% on a global level and [15-25]% at the EEA level. These shares are not in themselves indicative of market power and support the claim that SNPE would not have the ability to foreclose rivals in the downstream market. No SRM customer has expressed any concerns as regards a potential risk of being foreclosed for the supply of these products post-transaction.
51. The risk of customer foreclosure can also be excluded for these products as Protac does not buy them (and has no plans to do so) as it is not active in the manufacture of propellant charges. As noted previously, Protac subcontracts the manufacture of propellant charges to Roxel and Bayern-Chemie.

## **VI. CONCLUSION**

52. For the above reasons, the Commission has decided not to oppose the notified operation and to declare it compatible with the common market and with the EEA Agreement. This decision is adopted in application of Article 6(1)(b) of Council Regulation (EC) No 139/2004.

For the Commission  
(signed)  
Neelie KROES  
Member of the Commission

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<sup>19</sup> This open market excludes "captive sales", i.e. production sold by domestic producers to domestic defence authorities (i.e., for domestic use) as these quantities are not likely to be offered for sale in the open market.