specifically uses such financial analysis in order to assess the obligatory value spread and that it merely applies it as a first step which it supplements with a qualitative analysis in a unique fashion.

How the value spread is determined by means of income approach, DCF and decision tree analysis will be explained in the following.

4.1.1.2 Assessing the Spread

One can distinguish two subgoups of forecasting valuation scenarios: situations with two or more parties, such as licensing negotiations, and those in which value is seen merely from one viewpoint, for instance evaluation for resource allocation purposes within the respective company.

4.1.1.2.1 One-Party Scenarios

In a unilateral valuation situation, a value spread is defined by a best case and a worst case figure – the highest and lowest value respectively. Hence, income approach, DCF and decision tree analysis must be applied (at least) twice, that is to arrive at a financial figure representing the estimated best case scenario and one standing for the estimated worst case.[565]
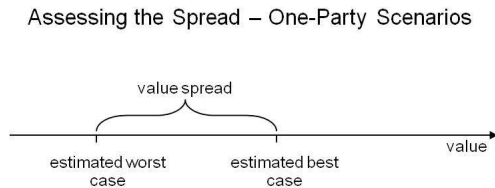

Figure 4.1: One-Party Scenarios.

4.1.1.2.2 Two- or Multi-Party Scenarios

In the course of a scenario involving two or more parties, each side assesses the respective brand or IP asset from their perspective in any event, which results in at least two (usually diverging) conceptions of value. For tactical reasons, the parties are unlikely to communicate to the other the outcomes of their DCF and decision tree analyses. Rather, a potential buyer or licensee

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565   How such a calculation is carried out in practice is described in detail above at 3.2.2.1.3 and will therefore not be reiterated here.

will, for instance, communicate an initial lowest price or royalty rate, based on the financial analysis, knowing that he will probably have to accept a higher amount by the end of the negotiations. Correspondingly, a potential seller or licensor will, along the lines of his DCF and decision tree analysis, specify a higher amount than he can reasonably expect to be the end result of all subsequent negotiations.

The success of these negotiations depends on whether the spread between these two figures constitutes a possible overlap, or 'gain to be divided', and on the manner in which actual negotiations are carried out (ideally in a way enabling the parties to appropriately share this gain). The SIM can be a decisive support in this regard.

For instance, a seller may want to sell for at least € 50,000 and a buyer may wish to acquire for a maximum of € 60,000 (cf. *figure 4.2* example 1). In this case, there is a negotiable overlap between € 50,000 and € 60,000. However, it may well be that a buyer may initially wish to close a deal for no more than € 50,000, whereas a seller demands € 60,000 (*figure 4.2* example 2). In this case, there is, at least after this first rough valuation step, no gain to be divided.
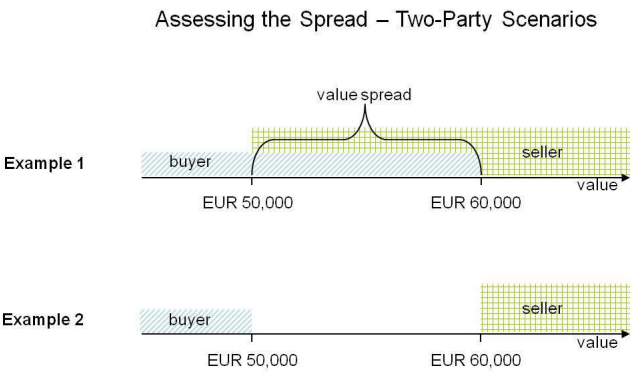

Figure 4.2: *Two-Party Scenarios.*

In the course of the former alternative, it is already apparent after the financial analysis that the parties are most likely to close a deal for an amount anywhere within the value spread. In the latter case, it remains to be seen whether they are going to find consensus eventually. This depends largely on whether the parties are going to find information on the asset previously unknown to them – information which is able to change their initial value estimates.

In the course of both alternatives, the SIM can provide significant negotiating guidance, especially since the step following the financial analysis, the prismatic evaluation (which will be discussed in detail hereafter at 4.1.2), enables the valuator to comprehensively collect information on legal, technical, business strategic and financial value-influencing factors. This enables the party having mandated the valuation to negotiate and decide on a well-informed basis.

It follows that a value spread is reached in the course of every forecasting valuation scenario, be it a one-, two- or multi-party setting. This spread is a first rough approximation to the asset's value after DCF and decision tree analysis.

At all events, and whether or not the value spread consists of a gain to be divided, this first version of the value spread is a suitable starting point to be substantially refined by the subsequent step, the prismatic evaluation.

4.1.1.3 Intermediate Findings

A financial income-based assessment comprising DCF and decision tree analysis constitutes the first of two major parts adding up to the Systematic Integrated Methodology. As a widely applied tool in the course of many different types of valuations, it serves, within the SIM, as an easy-to-use means of computing a first purely quantitative version of the inevitable value spread. At the same time, it enables the methodology to reach a financial value outcome. In the course of two- or multi-party settings, this calculation step helps systematise the negotiation process.

Such a financial analysis, as a sole valuation tool, would be too narrow and inflexible for purposes of forecasting valuations. However, it serves as a proper starting point to be complemented by a comprehensive contextual process operationalising qualitative value factors – the prismatic evaluation.

4.1.2 Prismatic Evaluation

The way in which a valuation tool is able to deal with future-related uncertainty and risk while providing comprehensive and reliable process and outcome is decisive for the quality of both the tool and the valuation result. Therefore, the treatment of the rough value spread by means of the second

step, the prismatic evaluation,[566] constitutes the central and unique component of the SIM. Contextual variables are operationalised by means of a scoring system, the outcome of which is utilised to close the information gaps the purely financial first step inevitably leaves.

The monetary value spread resulting from the financial analysis merely constitutes a first rough value estimate. This is due to the fact that income approach, DCF and decision tree analysis solely operationalise one type of financial data, albeit an important one: expected future income streams derived exclusively from the asset. However, in order to arrive at a valuation outcome which reflects reality as closely as possible, it is indispensable to include as much useful information as possible and feasible, financial and non-financial, quantitative and qualitative, in the valuation process. The more information the appraiser is able to collect with respect to the IP asset in question, the better will he or she be able to assess both its characteristics, opportunities as well as risks pertaining to that asset. All these factors greatly influence the value of an asset in a forecasting context. The above definition of financial (brand) value[567] can thus be approximated as closely as possible.

In the course of the SIM, such approximation is achieved by means of the prismatic evaluation. It is a means to reliably collect qualitative and quantitative contextual information and incorporate it into the valuation process.

One can distinguish four groups, or dimensions, of characteristics common to all IP rights (and all other assets as well) – legal,[568] technical, business strategic and financial.[569] Each of these so-called 'four dimensions of value' is analysed separately before the four single results are combined to one intermediary contextual score, which is subsequently merged with the value spread outcome from the financial analysis, arriving at a contextual valuation end result.

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566   This process has been named 'prismatic evaluation' as it can be exemplified by means of a ray of light fed through a prism. The intellectual property right in question is being represented by a white ray of light which the prism separates into four rays of complementary colours – the so-called 'four dimensions of value'. These dimensions are then separately analysed. The results are subsequently combined, that is fed back into a prism, which produces a contextual end result or white ray of light representing the evaluated IP asset.
567   At 2.2.2.1.
568   For purposes of adequate priority setting, the legal dimension will be specifically focussed on and set out in detail in the following chapter.
569   See above at 3.3.2.

4.1.2.1 Compilation of the Four Dimensions of Value

The SIM is not the first brand or intellectual property valuation tool which combines a financial analysis with qualitative contextual components. However, it provides all means necessary in order to systematically and flexibly process a number of important value influencers which is large enough to include all critical issues yet small enough to keep the workflow transparent and efficient.

In the light of the fact that there are value influencing characteristics common to all assets, characteristics common to intellectual property assets and those specific to each type of IP asset, the four dimensions have been designed to cover such general and specific value influencers. Instead of being bound to working with the same indicators in every case, independently of whether that indicator may be important or not in the particular situation, the appraiser is free to choose adequate topics (legal, technical, business strategic and financial ones respectively) within each dimension, depending on the respective asset under valuation and on other factors such as the valuation cause.

As elaborated above,[570] intellectual property rights' scarcity, a fundamental requirement for an asset's potential to develop a value, is established by legal protection (provided that secrecy – an option for patents rather than for trade marks – has not been chosen). Furthermore, next to existence of a legal protection system as a whole, there are several legal issues the existence or failure of which respectively can be decisive for the particular IP asset's value. Scope of protection or the possibility of alienation of an IP right[571] are good examples in this regard. Hence, legal issues must be included in any holistic value assessment of an IP right.[572]

Secondly, technical issues are of vital importance as well. This may at first glance be more apparent with respect to patents than brands. Technical factors which are important in the course of patent valuation include all those value-related questions which pertain to the patented technology, such as the

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570   At 1.3.1 and 2.1.1.3.7.
571   As to transferability of brands, particularly the trade mark part of brands, cf. *supra* at 2.3.2.1. Other trade mark law issues and their possible effect on brand value will be discussed in chapter five.
572   *Fezer*, § 27 MarkenG at no. 59, comes to the same conclusion, stating that the valuation method needs to accomodate the concrete legal relevancy of the brand's value, without providing further detail.

issues whether the technology is part of an industry standard or whether it is bleeding edge, leading edge or behind the curve. In analogy to this, technical brand aspects include questions pertaining to the branded product or service, such as quality and uniqueness. Furthermore, one needs to keep in mind that the 'marketing bundle' brand, not the IP right trade mark, is at issue. As explained above,[573] a brand contains one or several trade marks and additional marketing elements which impact brand value as well (brand awareness, image and identity). These elements are best dealt with under the heading 'technical dimension'. This is not only the case because they would be out of place in any of the other three dimensions, but particularly since the technology of a brand, i.e. the way it functions, can only be aptly dealt with on the basis of its components.[574] Therefore, in addition to the patent valuation analogy just outlined, the technical dimension of brand value needs to deal with brand specific elements such as brand awareness and customers' associations with the brand.

Business strategic factors comprise all those issues pertaining to the strategic role of the respective brand within the business as a whole. These include, amongst others, the questions whether the brand belongs to the core competence of the business and whether the proprietor duly applies necessary resources to exploit the brand to its fullest potential. In addition, it could be of importance to examine local business and political conditions.[575]

Last but not least, financial matters include issues such as production and brand management costs (including marketing and legal protection cost, like registration and attorney's fees), marginal cost and its expected development and return on brand investment. The amount of potentially paid prior royalties also plays a role in this context.

Taking these four groups of characteristics into account cannot guarantee that

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573 At 2.1.2.2 and 2.1.2.2.1.
574 Not without cause do acknowledged scholars concern themselves with 'brand technology' ('Markentechnik'). *Hans Domizlaff*, a deceased yet still well-known German brand specialist and artist, had already coined the term 'Markentechnik' in the first half of the 20th century, cf. *Harte-Bavendamm*, GRUR 1998, 335, 335. For more on 'brand technology' cf. e.g. *Deichsel*, GRUR 1998, 336.
575 In some jurisdictions, it may, for instance, be legally and/or factually impossible or at least very difficult to run a (joint venture) business in certain industry sectors or independently of governmental intervention. For example, the current Chinese Catalog for the Guidance of Foreign Invested Enterprises (Revised 2007) lists "encouraged", "restricted" and "prohibited" categories of foreign investment, cf. *Dickinson*, Breaking News: China Changes Foreign Investment (FDI) Rules.

every factor which may be important is included. However, it will provide the valuator with a comprehensive tool which, if properly handled, makes sure that no important value-impacting factor is overlooked and a realistic degree of comprehensiveness and accuracy is reached with respect to the end result. This sets the SIM apart from other hybrid methods which, for example, merely combine financial and psychographic factors.

Next to comprehensiveness, the objectives for and advantages of breaking down the value influencing issues into four dimensions are systematisation and risk reduction. The breakdown into the four dimensions, as well as the process of selection of the points to be dealt with in each dimension which will be introduced shortly, mitigate risk of possible overlap of these points. Furthermore, being able to assess the dimensions separately guarantees that the valuation process is manageable and ensures a systematic approach towards it. What is more, it enables the appointment of an expert in each field (legal, technical, business strategic and financial) to evaluate one dimension separately in the course of every valuation at issue. This means that the respective experts are able to exclusively focus on what they do best, applying and developing an unbeatable degree of experience. At the same time, the risk of subjectivity is spread since not one but four persons are working on the evaluation. The fact that some persons may see things more strictly than others will be levelled out to a considerable degree by this process. If merely one person took care of the whole valuation process, the outcome would be far more skewed by subjectivity.

For these reasons, the four dimensions of value have been developed to constitute the central component of the Systematic Integrated Methodology. Each dimension needs to be filled with suitable issues affecting the value of an IP right (a number of examples hereof have been given in preceding paragraphs). In this connection, a balance between the objective to include as many salient value aspects as possible and the aim to keep the process as lean, manageable and cost-effective as possible must be struck.

This can be achieved by selecting no more than ten to 15 issues in each dimension.[576] In order to ensure that all of these items are of comparably high importance, one should initially come up with the double amount of items, e.g. 20, and select the ten most important ones of these.[577] If this type

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576   This is a suggestion, based on theoretical and practical experience. However, the actual number a valuator wishes to include is at his or her discretion.

of selection did not take place, one would have to weigh the issues against each other according to their importance, which would bring about added insecurity and/or arbitrariness within the evaluation process and be almost impossible to carry out in a satisfactory way (apart from the fact that it would be rather time consuming).

Attention also needs to be given to the fact that – since all issues in all dimensions must be of comparable weight in order to prevent having to weigh the dimensions as such against each other – the number of items selected to be operationalised should, in general, be the same for each dimension.[578] This means, for instance, that each dimension should contain 15 items. Thereby the dimensions will be comparable and of equal weight. This is crucial for purposes of the following comparative evaluation, in the course of which the results of assessment of the dimensions will be combined with the outcome of the financial analysis.

The fact that number and content of issues dealt with in the course of the prismatic evaluation may vary provides users of the SIM with a high degree of content-related flexibility, if required, both in a specific situation and over time. However, taking advantage of this flexibility only makes sense if it is balanced against consistency. A reliable, i.e. reproducible, valuation technique[579] can only be put into practice if the processed items are changed as little as possible and as much as necessary from one valuation to the next.

Having selected an appropriate number of value influencers for each dimension, the next problem to solve is the semantic format in which these items will be prepared for scrutiny by the respective expert. Posing closed questions, e.g. questions which allow for a 'yes' or 'no' answer only, entail the problem that the outcomes would not be very meaningful, since possible nu-

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577   This is not a patent remedy for achieving total equality of importance of all issues included in the dimensions. Total equality is desirable but impossible to achieve in the course of any valuation methodology dealing with more than one qualitative factor. Hence, what one should strive for is a realistic degree of equality or comparability which can be achieved by means of the modus operandi just illuminated.

578   As explained in footnote 578, the SIM can be adapted to prevent midpoint tendency by allowing the experts to answer "Do not know". The respective fact statement would then not be counted, with the consequence that the remaining statements' point scores would have to be computed as a percentage out of 100%. This makes it possible to not include the same number of issues in each dimension. However, as it adds complexity to the process, it is generally recommended to keep the quantity of fact statements equal for each dimension.

579   Reliability is one of the requirements a forecasting valuation methodology is supposed to have, cf. 1.4.1.6.

Prismatic Evaluation – Example
Fact Statement Compilation and Assessment

IP right

Legal Dimension	Technical Dimension	Business Strategic Dimension	Financial Dimension
• Registration • Geographic Scope of Protection • …	• Degree of brand awareness • …	• Does brand belong to central business segment? • …	• Marketing cost • …

Fact statement:
The trade mark(s) is/are registered/protected in all relevant countries.

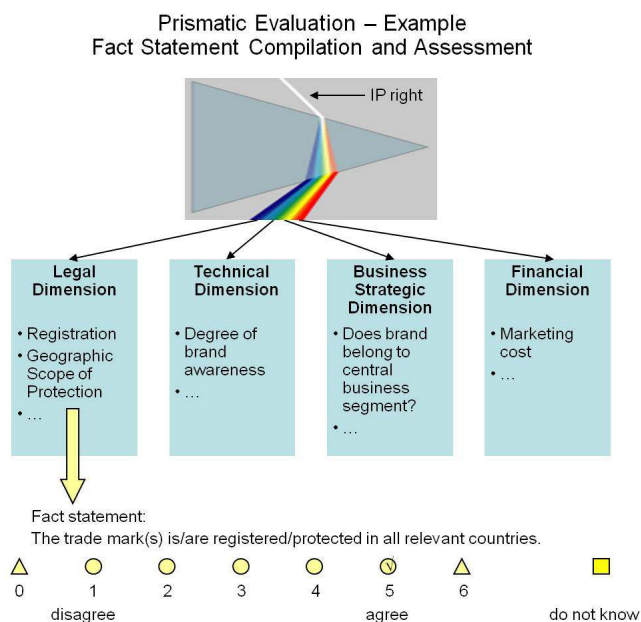0   1   2   3   4   5   6   do not know
disagree   agree

Figure 4.3: Demonstration of the prismatic evaluation from separation into the four dimensions to assessment of the fact statements. In this example, the point score for the said fact statement is five. The original version of the prism image is copyright of olypedia.de and derived from http://olypedia.de/olypedia.de:Bilder.

ances cannot be expressed. Open questions are equally not viable because answering them would be too time consuming and comparability of results would be hindered. Therefore, each point needs to be turned into a fact statement, for instance 'The trade mark(s) is/are registered/protected in all relevant countries'.

4.1.2.2   Assessment of the Dimensions: Comparative Evaluation

After selecting a suitable number of items to be operationalised within each dimension as just outlined, the items need to be evaluated. This is carried out by way of the so-called 'comparative evaluation'. It is so named since the result from this evaluation can be compared to a benchmark.[580]

First of all, the result in each dimension and thereafter the outcome of the

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580   This is optional and will therefore not be elaborated in detail. In brief, frequent application of the SIM on assets from varying industry sectors will enable the appraiser to collect average point scores per type of asset per industry branch. The mean of these scores can be utilised as an industry benchmark the point scores from each new valuation can be compared with. Hence, the SIM will, if frequently enough applied, enable the proprietor to be up to date with respect to strategic analysis and position of the respective assets.

qualitative evaluation as a whole (all four dimensions) need to be obtained. This is accomplished by means of a point score system. Subsequently, the point score total must be combined with the first version of the value spread resulting from the financial income-based analysis in order to reach a substantially concretised and delimited value spread as end result.

4.1.2.2.1 Point Score System

The respective expert gives his or her assessment of the fact statements in form of a score from (usually) one to five, with one meaning 'disagree' and five meaning 'agree'. Supposing there are twelve items in each dimension, the respective trade mark would normally achieve a total point score of between 48 (twelve (items) times one point multiplied by four (dimensions)) and 240 (twelve times five times four).[581]

The whole point scale has, however, been designed from zero to six, with zero meaning 'I disagree so much that this exceptional case is or is likely to be a deal breaker' and six equalling 'I fully agree and this issue is of such critical importance that a score mirroring a value lying above the initially envisaged value range is justified in this exceptional case'. The wording of the zero and six point score possibilities has been specifically designed in order to account for the events that, on the one hand, one negative answer of a fact statement may put the valuation result to zero or at least to a figure below the initially envisaged minimum respectively or one positive answer may, on the other hand, be so vitally important that it alone is decisive for the closing of a deal relating to the IP asset under valuation or at least shifts the value of the asset to a range above of what has originally been envisaged by means of the financial income-based analysis. In the course of an average valuation, however, the scores zero and six will normally not be found.

581 An odd number of point score possibilities has been chosen despite possible midpoint tendency, i.e. a susceptibility of an appraiser to choose the middle point score of an odd number of possibilities in case he or she is not absolutely sure what to answer. If the SIM provided for an even number of point scores instead of an odd one, it would force the respective expert to make a decision which would skew the result more. A means to decrease midpoint tendency would be to give the expert appraiser the possibility to answer 'Do not know' which would result in deletion of the respective fact statement (cf. fn. 566). As a logical consequence, in order to keep each of the dimensions' point scores comparable, the remaining fact statements' point scores, de facto resulting from 11/12 of all possible fact statements in case of 12 fact statements per dimension, would have to be calculated as out of a possible 100% score.

Supposing there are 12 fact statements in each value dimension, the intermediary result for each dimension would normally be anywhere between 12 (twelve times one point) and 60 (or zero and 72 respectively if one looks at the complete possible range). The four intermediary results from each of the value dimensions are then merged by means of addition.

This point score total does not imply that it is the only possible result in the case at hand. As every future-related valuation is an estimate, there cannot exist merely one definite solution. Hence, the score rather stands for the most likely constellation, as duly assessed by the respective experts at a specific point in time.

4.1.2.2.2   Combination with the Value Spread

After financial income-based analysis and assessment of the four dimensions, there are two intermediary valuation outcomes: the financial value spread (as a first rough approximation to the value of the asset) and the point score. These two need to be merged in order to arrive at the final result.

This shall be explained by means of the following example and *figure 4.4*, assuming that the value spread computed by means of the financial analysis constitutes a 'gain to be divided' between € 50,000 and € 60,000 in a brand sale constellation (*figure 4.2* example 1) and that the assessment of the four dimensions produced a result of 200 out of a total maximum of 288 points.

Assuming that the minimum score of zero points corresponds to € 50,000 and the maximum of 288 to € 60,000 would, however, be both wrong and a fiction, since no potential acquirer would be willing to spend € 50,000 in case the prismatic evaluation has arrived at a zero point score – which means that the results of the evaluation of the four dimensions of value are so disastrous that the valuation object is devoid of a minimum degree of functionality. Correspondingly, in case the evaluation has revealed that the asset in question is so strong and of such exceptional quality in important aspects that a value above the originally envisaged range is justified, a deal would be highly likely to be closed for substantially more than € 60,000. Hence, as set out above at 4.1.2.2.1, it needs to be accounted for the fact that these two extremes will have a monetary counterpart outside the scope of the initially envisaged value spread. After all, this first estimate of the value spread is rather rough and therefore cannot constitute a range which is

absolutely binding in all cases. Hence, the point scores one ('I do not agree') and five ('I agree') have been designed to correlate to the lowest and highest values respectively constituting the financial value spread.
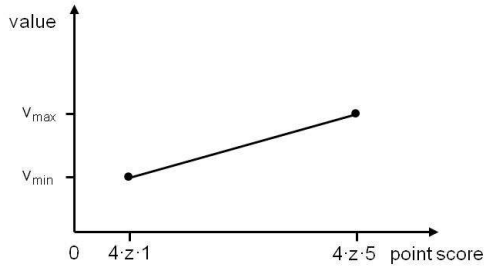

Figure 4.4: *An example of combination of scoring results from assessment of the four dimensions of value with the value spread resulting from the financial income-based analysis.*

In our example, therefore, the point score of 48, i.e. the score mirroring every fact statement being answered with a score of one, corresponds to the figure at the bottom end of the first value spread – € 50,000. The point score resulting from all fact statements being answered with a score of five, 240, thus corresponds to € 60,000.

In order to merge the point score from the prismatic evaluation with the value spread resulting from the financial income-based analysis, the Euro amount needs to be computed which corresponds to the respective scoring result. This is done utilising the two-point form of a linear equation.[582]

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582    $v = v_{min} + \frac{v_{max} - v_{min}}{(z \cdot 5 \cdot 4) - (z \cdot 1 \cdot 4)} \cdot (x - z \cdot 1 \cdot 4)$, whereas v means value, v_{min} is the lowest figure in the value spread range, v_{max} the highest value in the range and z the number of fact statements per dimension (z is variable yet should be the same in all dimensions, cf. *supra* at 4.1.2.1). This linear equation is based on the supposition that all correspondents of the point scores and the associated financial value figures which lie between the point score equalling all fact statements being answered with one ($z \cdot 1 \cdot 4$) and the point score in case all fact statements are given five points ($z \cdot 5 \cdot 4$) are on a straight line. This solution has been chosen for the SIM for reasons of plausibility and simplicity. The assumption of linearity may have to be given up in favour of a convex curve such as a Gaussian distribution in case it turns out that there is a bias in the course of the prismatic evaluation. The prime example of such bias would be midpoint tendency, i.e. a tendency to answer a fact statement with the middle possibility (in case of an odd number of possibilitles to choose from as proposed in the SIM) if the appraiser is not sure what to answer. Such midpoint tendency can, however, be remedied not only by application of a Gaussian distribution but also by giving the appraiser the option to answer 'I do not know'. Exactly this latter possibility has been chosen in the course of the SIM, cf. above at fn. 580. Hence, as the threat of midpoint tendency is dispelled, there is no reason to apply a complex and rather complicated concave function of whatever form instead of a considerably simpler straight line function. It is therefore better to choose the linear equation as described above.