



**Methodology and Specifications**

**Ferrous Scrap Reference Prices**

**“Scrap Indices”**

**December 2010  
(Updated May 2011)**

## Methodology and Specifications for TSI's Scrap Indices

### Contents

Contents.....	2
1. Overview.....	3
2. Scrap Indices.....	3
2.1 Currency and Units.....	4
2.2 Price fluctuations .....	4
2.3 Publication Time .....	4
3. Data Providers.....	4
3.1 Data Provider Qualifications.....	5
3.2 Data Provider Make Up.....	5
3.3 Data Provider Agreement.....	5
3.4 Data Provider Rewards.....	5
4. Data Collection.....	5
4.1 Data Collection and Storage Procedures .....	6
4.2 Collection period / Time of assessment.....	6
4.3 Data Collected and Units .....	6
5. Calculation Procedure for Scrap Indices .....	7
5.1 Normalisation Procedure .....	7
5.2 Data Rationalisation Procedure.....	7
5.3 Calculation of Reference Prices .....	8
5.4 Verification Procedures.....	8
5.5 Fall-back Procedure.....	8
5.5 Advisory Committee .....	9
<b>Appendix 1</b> Product Specifications and Pricing Points.....	10-11
<b>Appendix 2</b> Data Provider Agreement form .....	12-14

## 1. Overview

The Steel Index (“TSI”) is the premier provider of independent price information for key steel, scrap and iron ore products around the world, based on actual transaction data. It is a neutral, independent organisation that forms part of the Steel Business Briefing group of companies.

TSI specialises in the compilation of industry reference price data for clearly specified products, using rigorous, transparent processes and secure web-based technology. Its objective is to compile and publish reference prices (“Indices”) that are highly representative of physical spot market transaction prices for selected products. The Indices are based on price data submitted by companies active in the relevant product markets for completed physical transactions of specified products. This approach is far more rigorous and verifiable than telephone polling.

The Indices are compiled using transparent and verifiable processes, providing market participants with confidence in their objectiveness and making them suitable for use in financial instruments. TSI has no financial interest in the prices of the products for which it compiles Indices.

All companies submitting price data (“Data Providers”) have entered into signed agreements with TSI committing them to submit accurate price and related information based on actual transactions in the utmost good faith. In return, TSI commits to keeping the identity of each Data Provider and the data they submit confidential.

This document sets out the methodology and specifications (“Guideline”) to be used by TSI in compiling its scrap reference prices (“Scrap Indices”). A separate document is available describing the methodology and specifications used by TSI in compiling its steel and iron ore reference prices.

This Guideline may be updated over time to take into account changes in the market being assessed. Changes could reflect developments in terms of the specifications of the products traded or in trading practices, based on feedback from market participants. This will allow the Scrap Indices to evolve with the market and provide reference prices that are highly representative of physical spot market transactions at all times. Any such changes will be posted on The Steel Index website ([www.thesteelindex.com](http://www.thesteelindex.com)) under the menu option ‘Procedures & Methodology’.

## 2. Scrap Indices

TSI is currently compiling the range of reference prices for scrap products around the world listed in Appendix 1. This list is not fixed and is continually being expanded in response to client interest.

TSI’s scrap reference prices are for spot price transactions. The pricing point basis for each product is also specified in Appendix 1.

Ferrous scrap is available in a variety of grades and forms. TSI has chosen the most homogenous, fungible and frequently traded scrap product as its reference specification in each reporting region. This has the twin effect of ensuring that as many people as possible can report data to TSI, providing

good granularity to the data set, and making the price produced instantly recognisable to users of other grades in the same category.

Each of the stated reference products has price correlations with other forms of obsolete ferrous scrap. For instance, HMS 1 & 2, mixed in a 70:30 ratio will have a price relationship with HMS 1 & 2, mixed in an 80:20 ratio. By tracking these relationships, TSI is able to receive price submissions from Data Providers for a wider number of obsolete ferrous scrap grades in the reference market and normalise back to the stated reference product.

This deepens the pool of available transactions, providing greater liquidity in terms of overall transactions, as well as allowing TSI to track variations in price coefficients between grades of scrap. Normalisation co-efficients will be adjusted as and when data received signals the need.

Transaction data for scrap products with specifications outside the range of products listed in Appendix 1 is not included in the compilation of the respective scrap reference prices.

## 2.1 Currency and Units

The Scrap Indices are quoted in the currency and volume units most commonly used in the respective reporting region. These are included as part of the product definitions in Appendix 1.

## 2.2 Price fluctuations

The Scrap Indices are rounded to the nearest whole integer. This limits the price fluctuations of the Scrap Indices to a minimum movement of “1”, whether the product is denominated in US Dollars or another currency, or priced in metric tonnes/long tons or other volume units.

## 2.3 Publication Time

The Scrap Indices are published weekly, every Friday by 12:30 UK GMT, except on UK public holidays.

When UK public holidays fall on a Friday, publication of the weekly Scrap Indices will be on the following UK working day. Dates of UK public holidays for the following calendar year on which the Scrap Indices will not be published will be clearly specified on The Steel Index website ([www.thesteelindex.com](http://www.thesteelindex.com)).

## 3. **Data Providers**

For its Scrap Indices, TSI works with a broad group of companies that have agreed to submit spot scrap price data based on their physical transactions. These companies (“Data Providers”) include scrap producers (i.e. demolition firms, ship breakers etc.), traders, brokers and steel scrap consumers (“mills”) as well as scrap aggregators (“yards”) in all relevant regions. TSI aims to have a balance of Data Providers representing the “buy side” and “sell side” of transactions for each price series.

### 3.1 Data Provider Qualifications

TSI requires a number of conditions to be satisfied before a representative of a company can become a data provider:

- Every data provider has to be directly involved in the scrap supply chain, buying or selling relevant scrap products.
- Every data provider has to be directly involved in spot transactions. Long term contract prices, or index-related prices are ineligible for submission.
- Every data provider has to be buying or selling scrap products within the relevant categories and geographical areas at the pricing points specified for each series in Appendix 1.

### 3.2 Data Provider Make Up

Data providers typically hold positions in the commercial sales or purchasing departments in their companies, although they can also be members of senior management. All have direct access to their company's transaction data.

Scrap producers, scrap traders/brokers, aggregators and consumers all participate as Data Providers to the Scrap Indices in order to reflect the perspectives of the whole supply chain. TSI's objective is for each reporting segment to represent around one third of all Data Providers.

### 3.3 Data Provider Agreement

Each Data Provider must enter into a signed agreement ("Data Provider Agreement") with TSI. The Data Provider Agreement commits the Data Provider to submit accurate scrap prices and related information, ("Data") based on actual transactions known to the Data Provider, in the utmost good faith. In return, TSI guarantees that the identity of each Data Provider and the data submitted is kept completely confidential.

The Data Provider Agreement is reproduced in full in Appendix 2.

### 3.4 Data Provider Rewards

No monetary reward is exchanged for companies participating as Data Providers to the Scrap Indices. Companies taking part receive a complimentary subscription to TSI's reference price services, delivered direct to the individual submitting prices.

## 4. **Data Collection**

TSI requires Data Providers for its Scrap Indices to provide information of their spot transaction prices during the course of each trading week. As part of the submission, Data Providers also enter

data on the volumes for each spot transaction (for the purpose of volume-weighting the reference prices), and some related transaction information such as freight costs.

#### 4.1 Data Collection and Storage Procedures

Each Data Provider submits Data to TSI via secure, password-protected forms on the TSI website. Confidential communication is ensured by the use of an SSL certificate using 128-bit encryption. All Data Providers are assigned a confidential client identification number known only to a limited number of staff within TSI. All Data is stored only against the client identification number.

#### 4.2 Collection period / Time of assessment

Data Providers are able to submit Data on their transactions to TSI at any time convenient to them (i.e. 24 hours per day), 7 days per week, by using the secure online submission forms on the website.

The weekly Scrap Indices published each Friday are based on all relevant data submitted in the 7 days running from 11:01 GMT Friday in the previous week to 11:00 GMT on the day of publication.

#### 4.3 Data Collected and Units

TSI's Scrap Indices aim to provide a transparent and unbiased view of the average transaction prices for the specified scrap reference products in the spot market for the stated period. Hence data collected from Data Providers is for spot sales/purchases only, excluding other forms of purchasing arrangements.

Data Providers are required to submit the following transaction information in each data submission:

##### Material Specifications

- As defined for each product listed in Appendix 1.

##### Transaction Price

- Price – up to two ('.00) decimal places, in currencies listed alongside the product in Appendix 1.

##### Volume

- Volume associated with each price submitted – no decimal places, in the volume units listed in the product specification in Appendix 1.
- The minimum volume permitted varies between product definitions; Appendix 1 should be consulted. A minimum volume size is set for each product series because orders smaller than can frequently carry a 'small order' premium. Only transactions of the minimum volume or larger are considered in calculation of the Scrap Indices.

### Additional Information

- Data Providers are also required to submit information on the delivery point for the scrap transaction and its originating region. Where appropriate, transactions are normalised back to the reference port stated, by taking into account relevant freight differentials between the discharge port and TSI's stated reference port. Relevant deliveries to all major ports for which normalisation criteria can be defined are included in the compilation of the imported scrap price indices.
- Finally, Data Providers also have the option to submit information on the freight rates associated with their transactions, although this is not a requirement.

## **5. Calculation Procedure for Scrap Indices**

The same calculation procedure is used to compile all TSI Scrap Indices world-wide. This ensures that all Scrap Indices are compiled on a consistent basis and are directly comparable by clients.

Calculation of the Scrap Indices involves three principal steps:

- i) Normalisation of all the Data submitted to the reference price specifications and delivery points.
- ii) Rationalisation of the Data set i.e. statistical checks, validation and removal of outliers.
- iii) Volume weighted calculation of the Scrap Indices based on the rationalised and validated Data.

### **5.1 Normalisation Procedure**

For a given Scrap Index, all Data submitted is initially screened to ensure it matches the specification criteria for one of the allowable products and meets the minimum lot size requirements. Any Data not meeting these criteria is excluded.

In the remaining Data sample for a given Scrap Index, the prices for any submissions that do not match exactly the reference product specifications are normalised to the equivalent prices for the reference product, using the prevailing normalisation co-efficients. Normalisation coefficients reflect the value-in-use seen in the market for different product specifications.

The normalised price for each relevant submission is then used in the calculation of the Scrap Index.

### **5.2 Data Rationalisation Procedure**

All Data submitted is initially screened to ensure that the data set is as tight as possible pre-calculation stage. For each price series:

- If one or more price data points are more than +/- 20% from the arithmetic average (mean) price of the total data set submitted, the data point furthest from the average is excluded and the average recalculated; this procedure is repeated until all price data points are within +/- 20% of the average price of the remaining data set;
- The standard deviation of the remaining price data set is calculated;
- The highest and lowest prices within the remaining data are excluded if they are unique;
- Any remaining price data points more than +/- 1 times the standard deviation from the average (mean) price of the remaining data set are then also excluded.

The remaining data set is referred to as the “core data”.

### 5.3 Calculation of Reference Prices

Each of the Scrap Indices is calculated as the volume-weighted average price of the core data submitted for the relevant period.

In calculating the volume-weighted reference price the percentage weighting assigned to any single transaction is capped in order to ensure that the volume-weighted average figure remains representative of all core data submitted.

### 5.4 Verification Procedures

In addition to the calculation of the Scrap Indices, a variety of statistical analyses of all the price data and other information submitted by Data Providers are conducted. The purpose of these analyses is firstly to monitor and record the size, attributes and consistency of the data sample submitted each week to validate the statistical robustness of the Scrap Indices and secondly to monitor individual data submissions for any signs of bias or attempts by individual Data Providers to manipulate the Scrap Indices.

Any data submissions exhibiting unusual trends relative to the average and rest of the data sample are investigated by TSI and the Data Provider concerned is contacted. If no satisfactory explanation can be found, the agreement with the Data Provider concerned is terminated and no further data is collected from that company.

### 5.5 Fall-back Procedure

If analysis of the Data sample on any occasion reveals that it does not provide a sufficiently statistically robust basis for compiling one or more of the Scrap Indices (for example, if an insufficient number of transactions has been submitted during the relevant period), a fall-back procedure is deployed for the calculation of the relevant scrap reference price(s). This fall-back procedure ensures that all Scrap Indices can be compiled on every occasion.

The first step in the fall-back procedure is to supplement the Data submissions for the current period by “rolling forward” Data submissions made during the previous period by

Data Providers that have not submitted Data during the current period. The usual calculation methodology is then applied, but any price Data “rolled forward” carries a reduced volume-weighting in the calculation of the reference price.

If, after applying this first fall-back measure, there is still insufficient Data to meet the necessary robustness criteria for compiling the Scrap Index, a second fall-back measure is applied in which the Data sample is supplemented with firm bid and offer price data for the relevant period. The usual calculation methodology is then applied, but any firm bid and offer price data used carries a significantly reduced volume-weighting relative to any transaction Data submitted for the current period. Firm bid and offer data is equally volume-weighted in each calculation.

## 5.6 Advisory Committee

An advisory committee consisting of senior management of The Steel Index and Steel Business Briefing, with extensive experience of the steel, scrap and iron ore sectors has been established to review the product definition, data collection and Index compilation processes.

This committee focuses on reviewing the definitions and processes used periodically, with a view to ensuring that the Scrap Indices are highly representative of physical spot market transaction prices for relevant products. It cross-references the Scrap Indices with the opinions/reports of market commentators and industry participants to check they continue to be representative of the relevant spot markets.

If, in the opinion of the advisory committee, divergence ever occurs, it is responsible for proposing amendments to the procedures used in order to eliminate this perceived divergence. It should be noted that the committee cannot directly adjust the Scrap Indices in any given week before publication. The advisory committee can only propose changes to the definitions and procedures used for Index compilation in the future. This ensures that the Scrap Indices are not subject to any subjective input at any time.

If any changes are made to the product specifications or Index compilation procedures, these are posted on The Steel Index website ([www.thesteelindex.com](http://www.thesteelindex.com)) under the menu option ‘Procedures & Methodology’.

## Appendix 1

### TSI Scrap Reference Product and Price Specifications

#### A. Reference Product Specifications: Turkey (Imports)

Material: **Heavy Melt Scrap (HMS) 1 & 2, blended in an 80:20 Mix.** ISRI codes 200-206 inclusive. HMS1 wrought iron and steel scrap ¼” and over in thickness. HMS2 wrought iron and steel scrap, black and galvanised 1/8” and over in thickness. Grades 205 and 206 to exclude cast iron and thin gauge materials.

Pricing Point: CFR Iskenderun port, Turkey  
 Minimum lot size: 5,000 metric tonnes  
 Timing: Loading within 30 working days  
 Payment: Cash/LOC  
 Currency/Units: US\$ per metric tonne

#### Transactions of the following materials are normalised to the reference product

Material: **Heavy Melt Scrap (HMS) 1 & 2, blended in an 70:30 Mix.** ISRI codes 200-206 inclusive. HMS1 wrought iron and steel scrap ¼” and over in thickness. HMS2 wrought iron and steel scrap, black and galvanised 1/8” and over in thickness. Grades 205 and 206 to exclude cast iron and thin gauge materials.

Material: **Heavy Melt Scrap (HMS) 1 & 2, blended in an 90:10 Mix.** ISRI codes 200-206 inclusive. HMS1 wrought iron and steel scrap ¼” and over in thickness. HMS2 wrought iron and steel scrap, black and galvanised 1/8” and over in thickness. Grades 205 and 206 to exclude cast iron and thin gauge materials.

Material: **Shredded.** ISRI codes 210, 211 & 212. Homogenous iron and steel scrap, magnetically separated. Originating from automobiles, unprepared no.1 & no. 2 steel, miscellaneous baling and sheet scrap. Average density 60 (50- 70) pounds per cubic foot.

Material: **Plate and Structural.** ISRI codes 231, 232, 236 & 237. Cut structural and plate scrap, not less than ¼” in thickness, 5' in length and under, less than 24” in width. Phosphorus or sulphur not over 0.05%.

Material: **A3 scrap.** Wrought iron and steel scrap ¼” and over in thickness.

Material: **Bonus grade scrap.** ISRI codes 229, 230, 231, 232, 233, 236, 237, 238, 241, 249 and/or IRSI railroad ferrous scrap.

Minimum lot size: 1,000 metric tonnes (as part of a mixed cargo)

#### **For all products:**

Pricing Point: CFR Iskenderun port, Turkey  
 Minimum lot size: Deep-Sea: 5,000 metric tonnes\* (1,000 metric tonnes as part of a mixed cargo)  
 Short-Sea: 1,000 metric tonnes\*  
 Timing: Loading within 30 working days  
 Payment: Cash/LOC  
 Currency/Units: US\$ per metric tonne

\* *Except Bonus grade (see minimum lot size for Bonus Grade above)*

## B. Reference Product Specifications: India (Imports) - Containerised

Material:	<b>Shredded obsolete scrap</b> ISRI codes 210-212 inclusive. Homogenous iron and steel scrap, magnetically separated. Originating from automobiles, unprepared No.1 and No.2 steel, miscellaneous baling and sheet scrap. Average density 60 (50-70) pounds per cubic foot.
Pricing Point:	CFR Nhava Sheva port, India (West Coast)
Minimum lot size:	200 metric tonnes
Timing:	Loading within 30 working days
Payment:	Cash/LOC
Currency/Units:	US\$ per metric tonne

### Transactions of the following specifications are normalised to the reference product

Material:	<b>Shredded obsolete scrap</b> ISRI code 210. Homogenous iron and steel scrap, magnetically separated. Originating from automobiles, unprepared No.1 and No.2 steel, miscellaneous baling and sheet scrap. Average density 50 pounds per cubic foot.
Material:	<b>Shredded obsolete scrap</b> ISRI code 211. Homogenous iron and steel scrap, magnetically separated. Originating from automobiles, unprepared No.1 and No.2 steel, miscellaneous baling and sheet scrap. Average density 70 pounds per cubic foot.
Material:	<b>Heavy Melt Scrap (HMS) 1 &amp; 2, blended in an 80:20 Mix.</b> ISRI codes 200-206 inclusive. HMS1 wrought iron and steel scrap ¼" and over in thickness. HMS2 wrought iron and steel scrap, black and galvanised 1/8" and over in thickness. Grades 205 and 206 to exclude cast iron and thin gauge materials.

### **For all products:**

Pricing Point:	CFR Nhava Sheva port, India (West Coast)
Minimum lot size:	200 metric tons
Timing:	Loading within 30 working days
Payment:	Cash/LOC
Currency/Units:	US\$ per metric tonne

### C. Reference Product Specifications: USA (Domestic)

Material: **Shredded obsolete scrap** ISRI codes 210-212 inclusive. Homogenous iron and steel scrap, magnetically separated. Originating from automobiles, unprepared No.1 and No.2 steel, miscellaneous baling and sheet scrap. Average density 60 (50-70) pounds per cubic foot.

Pricing Point: Delivered US Midwest mill (Ohio, Illinois, Indiana & bordering vicinities).  
Minimum lot size: 1,000 long tons  
Timing: Delivery within 30 working days  
Payment: Cash/LOC  
Currency/Units: US\$ per long ton

#### **Transactions of the following specifications are normalised to the reference product**

Material: **Heavy Melt Scrap Number 1 (HMS)**. ISRI codes 200-202 inclusive. HMS1 wrought iron and steel scrap ¼" and over in thickness, not over 60 inches x 18 inches, prepared in a manner to ensure compact charging.

Material: **Plate and Structural** ISRI codes 231, 232, 236 & 237. Cut structural and plate scrap, not less than ¼" in thickness, 5' in length and under, less than 24" in width. Phosphorus or sulphur not over 0.05%.

#### **For all products:**

Pricing Point: Delivered US Midwest mill (Ohio, Illinois, Indiana & bordering vicinities).  
Minimum lot size: 1,000 long tons  
Timing: Delivery within 30 working days  
Payment: Cash/LOC  
Currency/Units: US\$ per long ton

## Appendix 2

### **DATA PROVIDER AGREEMENT: FERROUS SCRAP**

1. The Steel Index Limited (“TSI”) compiles and publishes an index comprising one or more sets of reference prices for ferrous scrap (“the Index”). This is based on information provided to TSI by a group of selected individuals in companies (“Data Providers”) active in different parts of the ferrous scrap supply chain in different regions of the world. The information provided to TSI is based on actual transaction prices known to a Data Provider. TSI uses this information (“the Data”) as a basis for compiling the Index. The intention is to publish the Index weekly, or more frequently, and to provide a useful and accurate indicator of current ferrous scrap prices. The Index is made available to all Data Providers free of charge.
2. TSI enters into an Agreement with each and every Data Provider on these terms. To ensure the integrity and reliability of the Index, should the Data Provider be unable at any time to comply with these terms, then the Data Provider must give notice of this to TSI. Subject to this, the Data Provider should give as much notice as possible of any intention to cease to provide Data in accordance with this Agreement.
3. The Data to be provided will comprise information based on ferrous scrap market transactions known to the Data Provider. The Data Provider’s obligation will be to provide specified price information over specified periods for certain quantities of specified products in selected regions which may include information concerning delivery periods, quantities and delivery points. This should be as accurate as possible and based on actual transactions to which the Data Provider is a party. Whilst the Data Provider will not be required to supply details of particular transactions, the Data should be based on knowledge of actual transactions and be provided in the utmost good faith.
4. TSI will give notice to the Data Provider specifying the Data to be provided and the times during each week for the provision of the Data. The normal method of doing both will be via a secure web-site. TSI will also give notice of any changes to specification of or times for the provision of the Data.

5. TSI acknowledges that the Data and all other information provided by the Data Provider under or in connection with this Agreement is confidential and that all rights in and to, title in and/or interest in such Data and information (including all property and intellectual property rights and any database rights and protections) remain vested in the Data Provider save to the extent necessary for TSI to compile and verify the Index and comply with any audit requirements. For the avoidance of doubt, the Data provided by the Data Provider shall be used by TSI solely for the purpose of compiling the Index.
6. The Data Provider acknowledges that all aggregated Data, and procedures, calculations, formulae and processes used to compile the Index, are confidential and that rights in and to, title in and/or interest in such aggregated Data, procedures, calculations, formulae, and processes, and the Index itself (including all property and intellectual property rights and any database rights and protections) shall be vested in TSI which shall have the exclusive right to distribute the Index to third parties for which TSI may charge and retain fees.
7. TSI has the exclusive right to decide whether and what Data and other information (from any source) is used to compile the Index and what weighting to give to any such Data or other information.
8. TSI and the Data Provider agree that all information provided by one party to the other under or in connection with this Agreement will be treated as confidential and will not be disclosed to any other party without the prior written agreement of both the Data Provider concerned and TSI. Only those TSI employees requiring access to the Data to fulfil their work duties in TSI will be given access to the Data. Should a Data Provider or TSI receive any notice of or suggesting a legal requirement to disclose any such information, then immediate notice shall be given to the other party, unless this is prohibited by law. Disclosure shall not be given unless mutually agreed or legally required and then only of such information as is agreed or there is a legal obligation to disclose.
9. This Agreement is made between TSI and the Data Provider. The Data Provider may not transfer its rights or obligations under the Agreement to any other party. TSI may not transfer or assign the Agreement with the Data Provider or any of its rights or obligations under the Agreement with the Data Provider to any other party without the prior written consent of the Data Provider.

10. Any amendment to this Agreement must be made in writing and executed by both parties.

Any notice under the Agreement shall be considered properly given: by TSI if posted by TSI on the secure website on the same page as used for the provision of the Data by the Data Provider and the Data Provider has subsequently logged onto that page and read the notice or sent by courier delivery to the address of the Data Provider set out below; and by the Data Provider if sent to the secure website used for the provision of Data by the Data Provider and TSI has subsequently logged onto that page and read the notice or sent by courier delivery to the address of TSI set out below.

11. This Agreement and the relationship between the parties shall be governed by and construed in accordance with English Law and each of the Parties irrevocably submits to the exclusive jurisdiction of the Courts of England and Wales.

**Signed:**

.....

**Name:** .....

**Position:** .....

**Date:** .....

**(Data Provider)**

**Company:**

.....

.....

.....

**Signed:**

.....

**Name:** .....

**Director**

**Date:** .....

**The Steel Index Ltd**

Head office  
Peek House,  
20 Eastcheap,  
London EC3M 1EB  
United Kingdom

**Regional Offices**

<u>Europe &amp; Middle East</u>	<u>Americas</u>	<u>China</u>	<u>Asia (except China)</u>
The Steel Index Peek House 20 Eastcheap London EC3M 1EB United Kingdom	The Steel Index 424 South 27 <sup>th</sup> Street Suite 306 Pittsburgh PA 15203 USA	The Steel Index Room 3301-03, Shanghai Plaza 138 Huai Hai Rd (Middle) Shanghai 200021, China	The Steel Index 69 Circular Road #02-01 Singapore 04942
Tel: +86 21 5110 5490 Fax: +86 21 5110 5480	+65 6227 7811 +65 6223 9315	+44 20 7645 9415 +44 20 7929 4666	+1 412 431 4370 +1 412 431 4371