The generated dataset contains metadata and content to draw up in the General Transit Feed Specification (GTFS) standard of transit data processing. A next step for this work will be to generate a GTFS-compliant operations schedule, service definition and SHP file creation of the current system. This will provide a basis for comparison models with other cities which have developed GTFS-compliant datasets (such as Nairobi and Cape Town) for further analysis and benchmarking of the study area transport performance with other emerging market cities.

We have shown that, by understanding an informal public transport network in geospatial terms, we will be able to create benefits for all role-players and improve the efficiency and effectiveness of the supply of public transport to more closely match the demand for public transport in an emerging world city.

We recommend that similar studies be undertaken in other developing cities, and that smart data processing algorithms be developed that can use the routes’ data to provide useful information to travellers. This would reduce the time city travels need to find ways from home to one place to the other in the city and would give them the ability to manage their daily commutes with some level of certainty. The authors are of the view that major data collection studies in emerging market cities should be executed with mobile phone tracking creating unique geospatial user traces.

**NOTE**

The list of references is available from the authors.

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**Table 1:** Results of the map-matching algorithm

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**LEGAL AND MANAGEMENT**

Adjudicator appointments under the NEC Option W1 – when do the time lines start to run?

**DIFFERENT CONTRACTUAL ARRANGEMENTS FOR CONSTRUCTION CONTRACTS REQUIRE DIFFERENT DISPUTE RESOLUTION PROCESSES.**

This is therefore not a 'one size fits all' situation. So, for example, under the FIDIC Red Book, where the employer is responsible for the design, the contract makes provision for a Standing Dispute Adjudication Board (DAB). Conversely, under the FIDIC Yellow Book, where the contractor carries design responsibility, the contract makes provision for an Ad Hoc DAB to be appointed.

Although there has been some conjecture over the years as to whether the NEC Option W1 requires a standing Adjudicator or an Ad Hoc Adjudicator, this matter has now been settled following the judgement in *Transnet SOC Limited v Group Five Construction (Pty) Ltd* – and others (7848/2015) [2016] ZAKZIHC 3 (9 February 2016) – in which matter it was decided that the NEC Option W1 made provision for Ad Hoc Adjudicators to be appointed.

The standard form of the NEC Contract Data (provided by the Employer) provides for the appointment of the Adjudicator at the time of the contract. Here, however, in the case under discussion, the defendant made provision for the appointment of an Adjudicator only in the event of a dispute arising. The court’s conclusion, however, was that the nature and jurisdiction of the Adjudicator (being an Ad Hoc rather than a standing Adjudicator) was not affected by the manner and timing of the Adjudicator’s appointment.

This outcome, it has to be said, is somewhat surprising, given the very stringent time-barrier provisions of NEC Option W1 clause W1.3 (2), which prevent any further recourse to any form of dispute resolution where the time constraints have not been complied with.

If there is any delay, therefore, in agreeing or appointing the Adjudicator, a claiming party might be left in limbo, without anyone to make a submission to and a situation where it may be argued that it is out of time and time-barred. This argument has been adopted on a number of occasions by some of our major employer bodies.

Let’s paint the picture. In most instances anticipated by the Adjudication Table, the claimant has to notify the dispute within four weeks after the claiming party becomes aware of the action or dispute event. Between not earlier than 14 days and not later than 28 days after the notification of the dispute the claiming party must submit its referral document to the Adjudicator.

In many cases employer bodies state in their part of the Contract Data that "The Adjudicator is... to be appointed under the NEC 3 Adjudicator’s Contract if and when a dispute arises". This approach defeats the object of the appointment mechanism provided in the data, which requires that a name be provided. i.e. "The Adjudicator is...". When their (the above-mentioned employer bodies’) phrase is inserted into W1 where the word “Adjudicator” is used, the sentence becomes meaningless. The
dispute arises when the claimant notifies the dispute in accordance with the Adjudication Table. So, at the same time as the claimant (or shortly thereafter) notifies the dispute we would expect him to submit the names of prospective Adjudicators to the defending party for their consideration and, hopefully, approval.

It also must be said that we are working in a very adversarial environment, and mutual consensus is in short supply. So, almost on principle, the defending party will not agree with the claimant’s proposed names, or perhaps even that a dispute exists. Either a process of ‘tit for tat’ then ensues, or no response is received. Eventually, efforts to reach agreement are abandoned and the Adjudicator nominating body is approached to make the appointment.

Clause W1 (3) contains an undertaking to make these appointments within four days of receiving the request. Bearing in mind that the Adjudicator nominating body is not a party to the contract, we are on somewhat tenuous grounds here! Reality is a bit different therefore, and appointments can take weeks rather than days to put in place.

Other things can also go wrong. The authors know of an instance where the Adjudicator nominating body was using an out of date e-mail address for the Adjudicator and a six-week delay in making the appointment ensued.

So it is very likely that, by the time the Adjudicator is actually appointed, the referral period (of between 14 and 28 days) would have expired. What is the claimant to do?

The times for notifying and referring a dispute may be extended by the Project Manager if the Contractor and the Project Manager agree to the extension before the notice or referral is due. In the environment described above, any such agreement will in all likelihood not be forthcoming. As an example of how the time lines may become the subject of dispute, see Sasol Chemical Industries Ltd v Peter Odell and Another (401/2014) [2014] ZAFSHC 11 (20 February 2014) where a request to extend the period for providing information was denied by the claiming party.

It is important to note that, when the referring party submits its referral document, the submission must be made to an entity. It cannot make a submission to an entity yet to be identified and appointed.

It therefore makes good sense that the time periods applicable to the referral of disputes to the Adjudicator only commence once the Adjudicator is chosen and appointed. In considering this conclusion, it is important to note the following:

- The appointment of the adjudicator is a joint act by the parties.
- It only takes place in the event of a dispute; until then, there is no appointment or need for the parties to act jointly.
- No time period is set for the parties to complete their joint act of appointment.
- Where no time is set for performance, performance must take place within a reasonable period of time.

If the parties have not chosen an adjudicator, either party may ask the Adjudicator nominating body to choose one. The Adjudicator nominating body chooses an adjudicator within four days of the request. But, obviously, the Adjudicator nominating body, who is not a party to the contract, is neither obliged to nominate the adjudicator, nor is it within their capability to do so within the four-day period agreed by the parties.

There is good legal support for the argument that contracts must be interpreted in such a way as to allow for business efficacy. In addition, an interpretation will not be followed if it would make a mockery of the contract.

Where the Adjudicator is agreed at the commencement of the contract, the claimant has the full period provided for to refer the disputes to the Adjudicator. It should not be any different where the parties have not agreed to the Adjudicator at the time of the contract. To suggest otherwise would be inequitable, inconvenient and impractical, and would severely curtail the "availability of the opportunity to exercise the right to [arbitral] redress" on the part of the claimant.

Because there is no time period set as to when the Adjudicator will be appointed in the event of a dispute by the parties acting jointly or by reference to the Adjudicator nominating body, it must follow that the time-bar clause cannot begin to operate until he has been appointed. To interpret the contract differently would lead to an absurdity.

Such an interpretation makes provision for business efficacy. Any other construction would be absurd. If an Adjudicator is not appointed prior to the expiry of a four-week period, the claimant loses its right to the dispute resolution procedure agreed to. The defendant could refuse to agree to act jointly in appointing the Adjudicator, or could simply frustrate and delay the process. The Adjudicator nominating body could fail to act or delay in doing so. It is not contractually bound to do anything; the parties have no enforceable rights against it.

A necessary ingredient of the swift adjudication process is certainty. Parties need to know where they stand, who must do what, and by when. The dispute resolution process needs to be sensibly operated and the failure to appoint an Adjudicator within the period for referral to him should not invalidate the adjudication process.

The sensible way to deal with the above conundrum is to make sure the Contract Data “The Adjudicator is…” always leads to a name. If the contracting parties feel, when forming their contract, that they would rather not insert a name at that stage for whatever reason, the Employer can make use of a panel of adjudicators — either his own panel or a recognised panel such as that set up by the ICE-SA Division of SAICE. The Contract Data statement would then state:

“[The Adjudicator is] the person selected from the ICE-SA Division (or its successor body) of the South African Institution of Civil Engineering Panel of Adjudicators by the Party intending to refer a dispute to him.” (See www.ice-sa.org.za)

Clearly this leads to a name on the panel and, by using the Panel, the Employer has already accepted the names on it. It also overcomes the argument about whether a dispute exists or not by stating “by the Party intending to refer” a dispute.

The downside of this arrangement is that the Parties still have to complete the NEC Adjudicators Contract, even though there is already a chosen and agreed Adjudicator. This is the point where stalling by the Employer often occurs, but at least that action is a breach of contract by the Employer, which is a compensation event 60.1(18) in ECC.

Some employers are using their own panels, and of course the tendering contractor is free to nominate in his tender other names he may wish to see included. This can lead to complications and sometimes disappointing results.

If the advice and guidelines set out in this offering are followed, the dispute resolution mechanisms will be more effective and the intended outcome of the adjudication process would, it is submitted, have a better chance of achieving an acceptable outcome.